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TECHNICAL SPECIFICATION

"SEISMIC ANALYSIS, TESTING, AND DOCUMENTATION"

KRSKO NUCLEAR POWER PLANT

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Revision 11

SAFETY RELATED

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RECORD OF REVISION

Revision	Date	Description of Change
0	June 16, 1975	Original Issue
1	November 29, 1994	Attachment of Appendix “A” – Revision 0
2	April 26, 2000	Complete revision, including revision to FRS in Appendix A, deleted Table 1 and Figure 1
3	Dec 3, 2004	Revised Cover Page, Record of Revision page, Floor Response Spectra Figure Matrix of Appendix A. Added Figure 125 to 128 to Appendix A.
4	April 25, 2005	Revised Cover Page, Record of Revision page, Floor Response Spectra Figure Matrix of Appendix A. Added Figure 129 to 134 to Appendix A.
5	August 14, 2008	Revised Cover Page, Record of Revision page, Revised page 13 Fuel Assemblies Percent of Critical Damping Values in accordance with CAP 2005-2751
6	October 13, 2010	Revised Cover Page, Record of Revision page, added reference 2.23, added Appendix A, Figure Matrix page for DG3 Building, and Figures 135 to 188.
7	May 7, 2013	Revised Cover Page, Record of Revision page, Scope description page, added References 2.25 and 2.26, modified BB1 Figure Matrix in Appendix A, changed DG3 to BB1 in Appendix A, added Appendix B, Figure Matrix page for Design Extension Conditions (DG3 Building), and Figures 189 to 218, added DEC definition in Section 3.0, added DEC seismic level 2xSSE in Section 5.2.3.
8	December 11, 2013	Cover Page and Record of Revision page revised, References 2.27 and 2.28 added, Appendix A and B title changed in Appendices and on Contents page, SSE spectra for Main Island and ESWIS removed from Appendix A, Enveloped 0.6g FRS based on USAR soil damping and SSE FRS for Main Island and ESWIS added to Appendix A, Appendix A figures re-ordered, Appendix A Figure matrices updated to reflect the changes in curves presented and re-ordering, Appendix A BB1 FRS listed with East-West before North-South for consistency with Appendix B, Appendix A and B BB1 Figure matrix changed to list in numerical order, Appendix B Main Island Figure

		Matrix added, Appendix B ESWIS Figure matrix added, Appendix B BB1 Figure matrix title modified, Appendix B note 2 moved to note 4 and modified, Appendix B notes 2 and 3 added, Appendix A Figures 70, 75, and 155 corrected at ZPA, Appendix B Figures 189-218 moved to Figures 285-314, Appendix B Figures 285-314 formatted and title blocks modified, Appendix B Figures 189-284 added.
9	April 15, 2014	Cover Page and Record of Revision page revised, Appendix A and B titles changed in Appendices and on Contents page, DEC definition in Section 3.0 edited for clarity, first two sentences of Section 4.1 removed, third sentence of Section 4.1 moved to Section 5.1, fourth sentence of Section 4.1 moved to Section 4.3.1 and edited for clarity, Section 5.1 removed and information moved to new Section 5.1, text added to new Section 5.1, minor text added to Sections 5.1.2 and 5.1.3, Section 5.2 added, Appendix C added and title added on Contents page, “SSE for Modifications on Existing SSCs” FRS for Main Island and ESWIS moved from Appendix A to Appendix B, SSE spectra for Main Island and ESWIS added back into Appendix A as in Revision 7, DEC FRS moved from Appendix B to Appendix C, Figures 125 to 128 formatted for clarity in Appendix A.
10	October 9, 2015	Cover Page and Record of Revision page revised, Appendix B titles are changed in Appendices and on Contents page, the list of appendices is added in Section 5.1, Sections 5.1.1 and 5.1.2 are joined into one section (5.1.1), a new Section 5.1.4 is added, Section 5.2.1, 5.2.2 and 5.2.3 are edited, a new Section 5.2.4 is added, minor changes in Section 5.6, a reference to DEC is added in Section 5.9, the 1st paragraph is added in Section 5.10, Figure numbering style in appendices, Appendix D for FRS for WMB is added, Footers are edited in main body text and in App A, B and C. Ground Response Spectra are added to Appendices B and C.
11	November 5, 2024	Cover Page, Content Page and Record of Revision page revised. New Appendix E is added (BB2 FRS) and Seismic Safety Impact Items are defined, both in accordance with PSAR3 actions (PSR3 1.3-005/006, PSR3 1.2-024). Sections 5.1, 5.1.5, 5.2.5 and 5.9 are revised/added accordingly. Other small changes are made in Sections 5.1.1, 5.1.4, and 5.2.4. The table in Section 5.2.5 is deleted to avoid confusion. Also, BB1 FRS titles are changes in App A and C with accordance with actual names of BB1 rooms. Footers are edited in main body text and in App A and C.

CONTENTS

CONTENTS (continued)

1.0 SCOPE

This Specification sets forth the general criteria and procedures which shall be used to verify that Seismic Category I mechanical and electrical equipment for the KRSKO Nuclear Power Plant can meet seismic performance requirements during and following the OPERATING BASIS EARTHQUAKE (OBE), SAFE SHUTDOWN EARTHQUAKE (SSE), and DESIGN EXTENSION CONDITIONS (DEC). This specification shall be used for design assessment and qualification of safety related equipment for seismic loads by analysis and/or testing methods for Krsko Nuclear Power Plant. It is applicable to equipment installed in Seismic Category I Structures. This Specification shall be used for revisions or changes to existing qualifications and for completely new qualifications.

All safety related equipment is defined as Seismic Category I. Wherever the word “equipment” occurs, it shall include equipment, equipment supports, equipment anchorage, systems, components or devices either being procured or existing.

Dynamic qualification of equipment must address and demonstrate the equipment’s ability to perform its intended safety function before, during and after it has been subjected to the expected loading combinations.

Any deviation from the requirements set forth in this document must be approved by ING.MOD.

2.0 REFERENCES & STANDARDS

Qualification work shall conform to the applicable provisions of the referenced documents (unless noted). For new installations, it is recommended that the current revisions of the referenced documents are used. If a conflict exists between any technical document and this Specification, the Specification shall govern. This conflict however, shall be brought to the attention of the E&DC Supervisor. Conflicts and resolutions shall be documented in writing.

2.1 Biggs, John M.; Introduction to Structural Dynamics, McGraw-Hill, 1964.

2.2 Blume, John A. & Associates; Earthquake Engineering for Nuclear Reactor Facilities, Engineers, San Francisco, 1971.

2.3 Thomas, T. H.; Nuclear Reactors and Earthquakes, Lockheed Aircraft Corporation, Sunnyvale, California, August, 1963, TID 7024.

2.4 Housner, G. W.; Dynamic Pressures on Accelerated Fluid Containers, Bulletin of the Seismological Society of America, Volume 47, pages 15-35, 1957.

2.5 Krsko USAR

2.6 IEEE 344-1971, Guide for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations.

2.7 IEEE 344-1975, Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations.

2.8 IEEE 344-1987, Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations

2.9 IEEE 323-1983, IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations.

2.10 USNRC Regulatory Guide 1.29, Seismic Design Classification

2.11 USNRC Regulatory Guide 1.60, Design Response Spectra for Seismic Design of Nuclear Power Plants.

2.12 USNRC Regulatory Guide 1.61, Damping Values for Seismic Design of Nuclear Power Plants.

2.13 USNRC Regulatory Guide 1.89, Qualification of Class 1E Equipment for Nuclear Power Plant Seismic Design.

2.14 USNRC Regulatory Guide 1.92, Combining Modal Responses and Spatial Components in Seismic Response Analysis.

2.15 USNRC Regulatory Guide 1.100, Seismic Qualification of Electrical Equipment for Nuclear Power Plants.

2.16 NUREG/CR-3892, A research Program for Seismic Qualification of Nuclear Plant Electrical and Mechanical Equipment – 5 Volumes.

2.17 NUREG/CR-3137, Seismic and Dynamic Qualification of Safety Related Electrical and Mechanical Equipment.

2.18 NUREG 0800, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*.

2.19 EPRI-NP-5652, Guideline for the Utilization of Commercial Grade Items in Safety Related Applications (NCIG-07).

2.20 EPRI-NP-6406, Guidelines for the Technical Evaluation of Replacement Items in Nuclear Power Plants (NCIG-11)

2.21 IEEE C37.98-1987, IEEE Standard Seismic Testing of Relays.

2.22 TR-536644-00072-SE-01 Rev. 0, "Generation of Broadened Floor Response Spectra for the Main Island Based on Absolute Acceleration", Parsons Power Group, Inc., January 1999.

2.23 WorleyParsons Calculation KRSKO-0-DC-025-SE-001, "New Seismically Qualified Building for DG3 – Generate Floor Response Spectra for DG3 Building", Revision 3, June 2010.

2.24 AC156-2007, Acceptance criteria for seismic Qualification by shake-table testing of nonstructural components and systems.

2.25 WorleyParsons Calculation KRSKO-1-DC-SE-0001, "Floor Response Spectra for the DG3 Building for a PGA – 0.6g (2xSSE)", Revision 4, February 2013.

2.26 IAEA SSR-2/1, Safety of Nuclear Power Plants: Design. International Atomic Energy Agency Specific Safety Requirements, January 2012.

2.27 WorleyParsons Calculation KRSKO-1-DC-SE-0002, "Main Complex FRS for DEC (0.6g)", Revision 6, September 2013.

2.28 WorleyParsons Calculation KRSKO-1-DC-SE-0005, "Essential Service Water Intake Structure FRS (DEC, PGA = 0.6g)", Revision 2, October 2013.

2.29 USNRC Regulatory Guide 1.122, Rev. 1, Development of Floor Response Spectra for Seismic Design of Floor-Supported Equipment or Components.

2.30 WorleyParsons Calculation KRSKO-1-DC-SE-0020, "Ground Response for 0.6 g for SP-702, Appendices B and C", Revision 0, October 2015.

* Krsko NPP is not a Standard Review Plan (SRP) plant, therefore it is not necessary to comply with NUREG 0800. However, it is recommended that NUREG 0800 is used for guidance in using time history methods.

3.0 DEFINITIONS

The following definitions shall have meanings set forth in this Item for this Specification. In some instances, supplementary information is furnished after the definition to clarify the meaning of the term.

RESPONSE SPECTRUM (SPECTRA) shall mean a plot of the maximum responses (in terms of displacement, or velocity, or acceleration) of damped single degree-of-freedom bodies mounted on the surface of interest (i.e., on the floor of a building for that floor's RESPONSE SPECTRUM) when that surface is responding to a given earthquake motion. The abscissa of the spectrum is the natural frequency (or period) of the body, and the ordinate is the maximum response. The RESPONSE SPECTRUM can be visualized from a series of single degree-of-freedom bodies with varying NATURAL FREQUENCIES fixed on a moveable base. To develop the RESPONSE SPECTRA, the base is subjected to a given earthquake motion and a time history analysis is performed to determine history records of the mass motions. These records are then used to generate the floor RESPONSE SPECTRA by plotting the maximum response versus the NATURAL FREQUENCY for each of the single degree-of-freedom bodies. Despite the name "floor RESPONSE SPECTRA," these curves do not represent the motion or acceleration of the floor itself, but rather the peak responses of single degree-of-freedom bodies attached to the floor.

FLOOR RESPONSE SPECTRUM (FRS) This is a response spectrum for equipment attached directly to the structure floor (or walls). Generally, FRS are broadened and smoothed envelopes of RS which are obtained by analysis of the building structure using a GRS as input.

GROUND RESPONSE SPECTRUM (GRS) This is a response spectrum for equipment (or buildings and systems) founded directly upon the ground. The GRS are derived as the envelope of the USNRC Regulatory Guide 1.60 Design Response Spectra, broadened in accordance with USNRC Regulatory Guide 1.122, and the FRS at nominal Elevation 100 m for all Main Complex buildings, including the Reactor Building, Interior Structure, Auxiliary Building, Intermediate Building, Control Building, Fuel Handling Building and the Drum Storage Area. Due to the enveloping of the Design Response Spectra and the in-structure FRS, the GRS exhibit the narrow peaks characteristic of the FRS, and also display the wider amplification zones of the Design Response Spectra typically above 7 Hz GRS are entitled Free Field Ground Surface FRS in Appendix A and GRS in Appendices B and C.

REQUIRED RESPONSE SPECTRUM (RRS) This is a response spectrum which is included with the equipment procurement documents to provide the data required for the seismic qualification of the equipment. For equipment directly attached to the structure floor and walls, the RRS is the envelope of all applicable FRS for that location. For equipment that is panel/cabinet mounted and is being qualified independent of the panel/cabinet, the RRS must be developed for the specific location on the panel where the equipment is to be attached.

TEST RESPONSE SPECTRUM (TRS) These are response spectra obtained from the motion of a test-shaking device. The TRS must generally meet or exceed the RRS for the amount of vibration input to the equipment to be considered sufficient.

TIME HISTORY (TH) Seismic time history functions represent the full frequency content and phase relationships of the input excitation for the duration of a seismic event typically presented as a record of acceleration versus time.

REQUIRED INPUT MOTION (RIM) This defines vibration input by specifying the acceleration of the equipment base at a series of specific single frequencies. It is applicable to equipment expected to undergo a single, but unknown, frequency motion as associated with line type systems. The RIM specifies the amplitudes of sinusoidal input motions, at a series of frequencies, which the equipment must withstand during testing.

PANEL/CABINET MOUNTED DEVICES Those components, materials, or equipment housed in or attached to control panels, cabinets, or otherwise attached to a supporting system. (Usually these supporting structures have natural frequencies below 33 Hz and as a result amplify and modify the motion of the floor to which they are attached).

LINE MOUNTED EQUIPMENT or components which are integral to or attached to “Line” systems such as piping, cable tray, duct, and conduit systems. A valve in a piping system is an example.

OPERATING BASIS EARTHQUAKE (OBE) shall mean the maximum vibratory ground motion that could be expected to occur at the plant site during the life of the plant.

SAFE SHUTDOWN EARTHQUAKE (SSE) shall mean that earthquake giving rise to the maximum vibratory ground motion, which can reasonably be predicted from geologic and seismic evidence, which could conceivably occur at the site at any time in the future. The SSE is the largest earthquake that the nuclear power plant is designed to withstand without functional impairment of those features necessary to shut down the reactor, maintain the plant in a safe condition, and prevent undue risk to the health and safety of the public.

DESIGN EXTENSION CONDITIONS (DEC) shall mean accident conditions that are not considered for Design Basis Accidents design [2.26].

RIGID FREQUENCY shall mean the frequency value above which the floor RESPONSE SPECTRUM acceleration is constant.

RIGID ATTACHMENT Equipment is rigidly attached to its support when there is no significant differential motion between the equipment and its support during an earthquake. This is defined by requiring the natural frequency of the attaching mechanism, with consideration of the attached equipment mass, to above the RIGID FREQUENCY.

RIGID EQUIPMENT This is equipment which does not have a structure, internal components, or assemblies which can resonate and amplify the seismic input motions. Equipment is considered to be rigid when the natural frequency of the structural, internal components and assemblies are above the RIGID FREQUENCY. The acceleration experienced by rigid equipment is the same as that of its support.

ZERO PERIOD ACCELERATION (ZPA) The high frequency acceleration level of the non-amplified portion of the response spectrum is referred to as Zero Period Acceleration or generally called ZPA. This acceleration corresponds to the maximum peak acceleration of the location to which the spectrum applies (i.e. the maximum acceleration of the floor or panel or other supporting structure).

ACTIVE COMPONENTS shall mean a powered component such as a piece of mechanical equipment, component of the electrical supply system, or instrumentation and control equipment which acts on command to perform a design function.

ASSEMBLY (ASSEMBLIES) shall mean any integrated system(s) complete with all appendages such as motors, fans, racks, piping systems, panels, and consoles which are supported as a unit by a surface having a defined seismic motion. When all the DEVICES of a system are mounted on a support structure, the unit becomes an ASSEMBLY.

BASE EXCITATION shall mean the displacement or force causing a body to vibrate when applied to the base of the system. This base motion is presented to differentiate from the case where the force or motion initiating vibration is applied to the body itself.

DAMPING shall mean the measure of energy dissipation in a vibrating body. If no damping were present in an oscillating system, the vibration would continue indefinitely; however, the presence of damping causes the oscillations to decay until the motion ceases. The energy loss is due to friction, impact, joint slippage, or similar causes. The effects of changes in structural stiffness, geometric support configuration, and modulus of elasticity are also usually grouped under the general heading of DAMPING in current design methods. DAMPING factors are discussed in section 5.3.

DEVICE(S) shall mean any motor(s), fan(s), valve(s), switch(es), relay(s), sensor(s), or other similar components to be seismically qualified which is (are) not supported directly from a surface having a defined seismic motion.

FLOOR ACCELERATION(S) shall mean the acceleration(s) of a particular building floor (or equipment mounting) resulting from a given earthquake's motion applied to the building.

FRAGILITY TEST shall mean a test to establish the equipment's ultimate capacity to resist seismic motion and remain operable.

NATURAL FREQUENCY (FREQUENCIES) shall mean the frequency at which a body vibrates due to its own physical characteristics (mass and configuration) and the elastic restoring forces that are brought into play when the body is distorted in a specific direction and then released, while restrained or supported at specified points.

PASSIVE COMPONENT(S) shall mean a static component(s) such as a support or a pressure boundary which does not have moving parts.

SAMPLE TEST shall mean that several representative pieces of equipment are chosen from a group of identical pieces of equipment, are tested for qualification, and then are presented as evidence to qualify all the other pieces of equipment in the group.

4.0 PROCEDURE

4.1 General Information

The seismic qualification can be accomplished by the following methods:

a. Perform an analysis of the equipment.

b. Test the equipment under simulated seismic conditions.

c. Combination of analysis and test.

d. Qualification by similarity.

If the SUPPLIER/SUBCONTRACTOR wishes to perform a mathematical analysis of ACTIVE COMPONENTS, he shall submit a description of his method of analysis and model for approval.

4.2 Qualification by Analysis

4.2.1 Dynamic

The equipment shall be modeled as a multi-degree-of-freedom, lumped mass system with mass-free interconnections. The model shall be used to determine the seismic response for the vertical and two orthogonal, horizontal directions. It shall be the SUPPLIER/SUBCONTRACTOR'S responsibility to demonstrate that the number of mass points he has chosen in the seismic analysis to represent his equipment gives an accurate prediction of his equipment's' response resulting from a seismic disturbance.

The NATURAL FREQUENCIES and mode shapes of the equipment in any direction as it will be mounted in service shall be determined.

If the fundamental NATURAL FREQUENCY of the equipment (including the effect of the supports and attached components, if any) is greater than or equal to RIGID FREQUENCY, the equipment may be analyzed statically as follows:

a. In the static analysis, the seismic forces on each component of the equipment shall be obtained by multiplying each lumped mass by the RIGID FREQUENCY FLOOR ACCELERATION. The seismic force shall act on the mass points of each component.

b. The seismic stress shall be added to the equipment's operating stresses.

If the fundamental NATURAL FREQUENCY of the equipment in any direction is less than the RIGID FREQUENCY, the analysis of all equipment shall be performed as cited in one of the following:

a. The lumped mass system may be analyzed using the "RESPONSE SPECTRA Modal Analysis" technique. If this method is used:

    1. A stress analysis shall be performed using the inertia forces or equivalent static loads obtained from the maximum accelerations of the dynamic analysis.

    2. Shears, moments, stresses, deflections, and accelerations shall be calculated on a mode by mode basis.

    3. The system response shall be obtained by combining each modal response by the square root of the sum of the squares, except for closely spaced modes where the absolute sum of the responses shall be used. The closely spaced modes are defined as those whose frequency difference is less than 10% of the frequency.

    4. The responses of the equipment to two horizontal and the vertical floor RESPONSE SPECTRA inputs shall be combined as follows:

$$R = \max (RH1 + Rv \text{ or } RH2 + Rv)$$

    Where: RH1 and RH2 are the two components of the maximum horizontal response. Rv is the maximum vertical response.

b. The SUPPLIER/SUBCONTRACTOR may use the time history method rather than the RESPONSE SPECTRA Modal Analysis (RSMA) technique (see NUREG 0800 for guidance). The time history floor response shall essentially envelop the floor RESPONSE SPECTRA.

Note: Responses derived from time histories shall be combined on the same basis as Item 4.2.1 sub-item a.4.

Parametric studies shall be undertaken by the SUPPLIER/SUBCONTRACTOR to determine the range over which the calculated NATURAL FREQUENCIES of the equipment can vary. The parametric study shall consist of varying the parameters, which are inherent in the formulation of the equipment's dynamic model to establish the range over which the NATURAL FREQUENCIES of the model can vary. Using this range and the RESPONSE SPECTRUM envelope, the maximum acceleration of the mass points in this range shall be determined.

The analysis of DEVICES attached to another piece of equipment shall be performed as follows:

a. If the fundamental frequency of the supporting equipment (including the effects of supports and contributing attachments) is above RIGID FREQUENCY, the DEVICE may be considered as though attached to the building, and the floor RESPONSE SPECTRUM envelop shall be applied to the supported piping and instrumentation.

b. If the fundamental frequency of the supporting equipment (including the effect of supports and contributing attachments) is below RIGID FREQUENCY, the floor RESPONSE SPECTRUM envelope shall be applied to the supporting equipment. The analysis of the supporting equipment shall include the effects (e.g., mass, stiffness) of the supported piping and DEVICES. The supporting equipment SUPPLIER/ SUBCONTRACTOR shall either develop a new floor RESPONSE SPECTRUM envelope at the points of attachment of the supported equipment or provide the dynamic model of the supporting equipment.

c. For the condition where the supporting equipment is not large (less than 10 times the effective mass of the supported equipment) compared with those of the supported DEVICES and the attached piping, the dynamic model of the supporting equipment shall be supplied for analyzing the supported equipment.

d. For equipment supported by different buildings or at different elevations of the same building where differential movements of the anchor points could occur, the stresses due to the differential movement shall be calculated separately by applying the worst combination of the movements at the anchor points. These stresses will be superimposed on the stresses obtained from the dynamic analysis of the equipment.

Tanks or Vessels:

a. Tanks or vessels containing liquids and whose natural frequencies are above RIGID FREQUENCY shall be analyzed as detailed in References 2.2 and 2.4.

b. For tanks or vessels containing liquids and whose natural frequencies are equal to or less than RIGID FREQUENCY, the SUPPLIER/SUBCONTRACTOR shall include the flexibility of the tank and motion of the liquid in the analysis. References used in the analysis shall be included as part of the documentation.

The analysis of equipment attached to piping shall be performed as follows:

a. If the fundamental frequency of the supporting pipe including the mass of all attached devices is above RIGID FREQUENCY, the instrumentation shall be considered as though attached to the piping support, and the floor RESPONSE SPECTRUM envelope shall be used to qualify the supported instrumentation.

b. If the fundamental frequency of the supporting pipe is below RIGID FREQUENCY, the equipment shall be modeled in the piping system.

Equipment shall be analyzed for seismic fatigue for five OBE’s and one SSE. This shall include 10 maximum stress cycles for flexible equipment and 5 maximum stress cycles for rigid equipment for each occurrence. Westinghouse supplied equipment shall be analyzed for 20 OBE’s.

4.2.2 Static

The static load equivalent or static analysis method involves the multiplication of the total weight of the equipment or component member by the specified seismic acceleration coefficient read from the appropriate FRS. The magnitude of the seismic acceleration coefficient is established on the basis of the expected dynamic response characteristics of the component. Components, which can be characterized as a single-degree-of-freedom system, are considered to have a modal participation factor of one. Seismic acceleration coefficients for multi-degree-of-freedom systems which may be in the resonance region of the amplified response spectra curves are increased by 50 percent (multiplied by 1.5) to account conservatively for the increased modal participation.

4.3 <u>Qualification by Testing</u>

4.3.1 General

a. Tests shall be performed by subjecting the DEVICES and ASSEMBLIES to a vibratory motion, which simulates that motion to be experienced at the equipment mounting during a SSE.

b. The acceptable test inputs for simulating the vibratory motion to be experienced at the equipment mounting during a SSE are defined in item 4.3.2.

c. All ASSEMBLIES shall be tested with the DEVICES in an operating condition, except as noted in sub-item d. below. The test shall demonstrate the ability of the equipment to perform its intended function.

d. In the case of complex ASSEMBLIES such as control panels, switchgear, and other similar components, where testing the ASSEMBLIES with its DEVICES in an operating condition becomes impractical, the ASSEMBLIES may be tested with the DEVICES inoperative. However, the test of the ASSEMBLIES shall not only qualify the ASSEMBLIES themselves, but also determine the motions at the DEVICE mountings in the form of the revised floor RESPONSE SPECTRA for the analysis of attached DEVICES.

e. The ASSEMBLY or DEVICE to be tested shall be mounted for the test in a manner that simulates the intended service mounting and input shall be the excitation at the mounting.

f. The input to the equipment shall be based on the motions at equipment mounting not the input to the shake table.

g. If the SUPPLIER/SUBCONTRACTOR intends to qualify the equipment by the results of a FRAGILITY TEST, he shall state in the Proposal the results of the FRAGILITY TEST and give a detailed description of the method used to obtain those results.

h. The vertical and horizontal inputs shall be applied simultaneously, unless it can be proved that the horizontal and vertical responses are uncoupled.

i. If a sample test is performed, random samples or systematic samples shall be chosen to prove the uniformity of products in accordance with the Parent Specification. The in-service equipment shall not be a tested sample.

j. If the ASSEMBLY is too large to be mounted on the shake table, other means may be used. These shall be presented in the proposal for approval.

k. The maximum vibratory accelerations at the equipment mounting shall be equal to or greater than the maximum FLOOR ACCELERATION.

l. For testing purposes, the duration of the <u>strong motion</u> accelerations shall be 20.0 seconds.

4.3.2 Definitions of Test Inputs

a. Multiple Frequency Tests

1. Time History

A time history test shall mean a test that uses time history as input. Time history is the trace of acceleration, velocity, or displacement as a function of earthquake time which the floor of a building or the ground experience during an earthquake.

2. Random Vibration

A random vibration test shall mean a test that uses a vibratory input which is derived from a random signal source. Filters, amplifiers, and other mechanisms may be used to shape and apply the input. The signal source must contain a span of frequencies over the range of interest.

3. Complex Motion Tests

A complex motion test shall mean a test that uses input signals that comprises the summation of one or several individual narrowband inputs superimposed on lower broadband random motion. The complex signal affords a chance of producing an appropriate table motion without introducing excessive ZPA levels. This is actually a method of qualification by experience presented in IEEE 344-1987.

b. Single Frequency Tests

1. Continuous Sine

A continuous sine test shall mean a test that uses as input a number of consecutive sinusoidal oscillations of one frequency and approximately identical peak accelerations applied for a certain duration.

2. Sine Beat

A sine beat test shall mean a test that uses as input a continuous sinusoid of one frequency, amplitude modulated by a sinusoid of a lower frequency or a modulated sinusoid with pauses between the beats. As used in this Specification, the amplitudes of the sinusoids represent acceleration and the modulated frequency represents the frequency of the applied seismic stimulus.

3. Decaying Sinusoidal

A decaying sinusoidal test shall mean a test that uses a short time sinusoidal input of a number of consecutive sinusoidal oscillations. The amplitudes of the sinusoids represent acceleration. The initial half wave amplitude has the maximum value. The amplitude of the succeeding cycles of identical frequency diminishes depending on the coefficient of damping of the test system.

4. Short-time Sinusoidal

A short-time sinusoidal test shall mean a test that uses as input a number of consecutive sinusoidal oscillations of one frequency and approximately identical peak acceleration applied for not less than two cycles and for a shorter duration than three times the time constant(s) of the DEVICE or ASSEMBLY under test. The half wave amplitude is a measure of acceleration.

c. Sinusoidal Sweep

A sinusoidal sweep test shall mean a test that uses a vibratory input consisting of a sine wave of constant peak amplitude acceleration and slowly varying frequency expressed in a number of octaves per unit of time.

The basic input to the equipment mounting shall essentially simulate the floor RESPONSE SPECTRUM envelope.

In those cases where RRS requires high accelerations at the lowest frequencies that require high test-table displacement capabilities, the requirement for bounding the RRS by TRS can be modified under the criteria given in EIII 344, 1987.

4.4 Qualification by Similarity

Equipment types which are similar to those previously qualified or exposed to dynamic environments are candidates for review and qualification by the concept of similarity. Qualification by similarity is actually a method of qualification by experience presented in IEEE 323, Sections 5.2 and 6.4.1, IEEE 344-1975, Section 7.3 to 7.5, and recently expanded and presented in IEEE 344-1987, Section 9.0.

According to IEEE 344, dynamic similarity shall be reviewed in a manner that addresses, establishes and documents the following:

- Physical system similarity
- Similarity of excitation
- Dynamic response similarity
- Similar operability

Physical similarity must be established for the equipment including the configuration and mounting characteristics. Comparisons must be made to review as a minimum, the following physical characteristics:

- Physical dimensions, geometry, configuration
- Weight, including distribution and center of gravity
- Structural properties and load transferring characteristics
- Mass and stiffness
- Materials and damping characteristics
- Stability and boundary conditions
- Mounting and fit
- Base anchorage strength and stiffness
- Mechanical/Electrical Operating features
- Equipment interfaces including conduit, cable tray, cable and adjacent connecting parts

Note that the type testing section of testing qualification reports is a good reference source for information on like or similar makes or models of equipment.

Similarity of excitation must be established through consideration of like parameters including:

- Spectral characteristics

- Duration of excitation
- Proper vibration buildup with a minimum of 15 seconds of strong motion duration
- Directions of excitation axes
- Location of measurement
- Fatigue effects from exposure to required normal and abnormal conditions

Where parameters are not identical, similarity of excitation can be conservatively established through data extrapolation or interpolation. Measurements can be estimated on other parts of the structure when justified by reasonable calculations backed with sound engineering methods and approach.

Qualification by similarity can be achieved by establishment of physical similarity and similarity of excitation. Dynamic response can be evaluated and extended toward similar systems once physical system characteristics and excitation characteristics are available. When system response and physical system characteristics are available, required excitation characteristics can be evaluated and utilized to establish qualification of the similar equipment.

Qualified equipment must be capable of performing its safety function as required before, during and after a dynamic event. Therefore, function and operability should also be established as similar. The experience data utilized must provide sufficient evidence to establish similar operability characteristics for all modes of selection, range and operation.

In addition to the above requirements, the following criteria must also be satisfied when applicable:

- Both equipment items should be similar in function, operation, physical and equipment characteristics and have similar excitation environments.
- Similarity of the equipment characteristics and of the excitation environment must be established by techniques that can be technically justified.
- Individual devices or components mounted on parent equipment or panels, and considered for qualification by similarity, must be justified separately and using the same methods and criteria as for main equipment types.
- Any differences found between physical and dynamic characteristics of the qualified equipment vs. the original qualification data must be listed. The effects of all differences must be addressed and justification given for their acceptance. Justification should include sufficient evidence that any changes do not result in center of gravity shifts, the formation of different resonant frequencies or additional mechanisms for malfunction or failure. Differences between similar equipment should be such that they maintain or improve on the structural integrity or function of the equipment.
- Qualification documentation for the existing previously qualified equipment must be clear, correct and in an auditable file or calculation. Information should cover qualification parameters such as input motion, resonant frequencies, damping and responses as well as other data required for comparison of physical characteristics and excitation.
- Basis for similarity and acceptance must be clearly documented in an approved calculation. Documentation requirements for qualification work are specified in Section 6.0 of this Specification.

Once similarity has been reviewed and established according to the criteria provided herein, qualification test or analysis data should be reviewed for conformance and acceptability with the minimum requirements.

5.0 SEISMIC QUALIFICATION DATA

5.1 Seismic Levels

Seismic Qualification data in this specification is applicable for OBE, SSE, and DEC seismic levels. Appendices A, B, C and D contain horizontal and vertical FRS as follows:

Appendix A	Floor Response Spectra Curves for Safety-Related Buildings/Structures for Operating Basis Earthquake (OBE) and Safe-Shutdown Earthquake (SSE)
Appendix B	Floor Response Spectra Curves for “SSE for Modifications on Existing SSCs” on Main Complex Structures and Essential Service Water Intake Structure
Appendix C	Floor Response Spectra Curves for Main Complex Structures, Essential Service Water Intake Structure, and Bunkered Building 1 for Design Extension Condition (DEC)
Appendix D	Floor Response Spectra Curves for SSCs in the Waste Manipulation Building 1 for Operating Basis Earthquake (OBE) and Safe-Shutdown Earthquake (SSE)
Appendix E	Floor Response Spectra Curves for SSCs in the Bunkered Building 2 for increased Operating Basis Earthquake, Design Extension Condition earthquake, Increased Design Condition Earthquake.

Sections 5.1.1 to 5.1.5 provide peak ground accelerations and damping parameters used to develop the FRS above. Section 5.2 explains the conditions in which each of these FRS should be used.

FRS are provided for Seismic Class 1 buildings at major floor elevations in terms of acceleration (g’s) as a function of frequency.

The horizontal FRS, if not specified for use in a particular direction, shall be applicable to both East-West and North-South directions.

5.1.1 OBE and SSE for design basis safety-related SSCs (Appendix A)

The OBE and SSE input design response spectra comply with NRC Regulatory Design Guide 1.60. The vertical components for OBE and SSE are equal to the horizontal components in all frequency regions. The OBE and SSE peak ground acceleration for design-based safety related SSCs are, respectively, 0.15g and 0.30g.

It is noted that the OBE and SSE peak ground accelerations for Bunkered Building 1 FRS are conservatively scaled by 1.5.

5.1.2 SSE for design basis modifications in Main Island structures and ESWIS (Appendix B)

The SSE input design response spectra for design basis modifications comply with NRC Regulatory Design Guide 1.60 for both the horizontal components and vertical component and the peak ground acceleration is 0.6g. Composite modal damping used in the seismic analyses for developing the SSE FRS for design basis modifications are consistent with the values provided in USAR Table 3.7-2 for SSE. SSE FRS for design basis modifications envelope spectra calculated for PGA=0.3g and PGA=0.6g, both based on USAR-defined soil damping values. The spectra are provided only for use on the Main Island structures and Essential Service Water Intake Structure.

5.1.3 Design Extension Condition (Appendix C)

The DEC input design response spectra comply with NRC Regulatory Design Guide 1.60 for both the horizontal components and the vertical component, and the peak ground acceleration is 0.6 g. The difference to the SEE FRS for design basis modifications is that the composite modal damping used in the seismic analyses for developing the DEC FRS is limited to 20% in accordance with NUREG 0800 Standard Review Plan 3.7.2. The DEC FRS envelope SSE spectra for design based SSCs for PGA=0.3g and spectra for PGA=0.6g, the former calculated using the USAR-defined soil damping values and the latter calculated using the 20% limit on composite modal damping. Limiting composite modal damping to 20% results in more conservative FRS than those based on USAR-defined soil damping values. DEC FRS are provided only for use on the Main Island structures, the Essential Service Water Intake Structure, and Bunkered Building 1.

5.1.4 OBE and SSE FRS for Waste Manipulation Building 1 (Appendix D)

The input design response spectra for SSCs in Waste Manipulation Building 1 comply with NRC Regulatory Design Guide 1.60 for both the horizontal components and vertical component. The peak ground accelerations for Waste Manipulation Building 1 are, respectively, 0.3g and 0.6g (twice the OBE and SSE intensities for design based SSCs). The composite modal damping used in the seismic analyses for developing the WMB FRS is limited to 20% in accordance with NUREG 0800 Standard Review Plan 3.7.2. SSE FRS for Waste Manipulation Building 1 envelope spectra calculated for 0.3g and 0.6g.

5.1.5 Increased OBE, DEC and increased DEC for Bunkered Building 2 (Appendix E)

The input design response spectra for SSCs in Bunkered Building 2 comply with NRC Regulatory Design Guide 1.60 for both the horizontal components and vertical component. The peak ground accelerations for Bunkered Building 2 are 0.3g, 0.60 g and 0.78g for the increased OBE, DEC and increased DEC earthquake, respectively. The composite modal damping used in the seismic analyses for developing the BB2 FRS was not limited to 20% as FRS were calculated by a direct dynamic time history analysis which accounts for the unlimited radiative damping of the soil. The approach is consistent with NUREG SRP 3.7.2, which states that for frequency domain analysis, the 20% threshold can be exceeded. Bunkered Building 2 DEC FRS are represented by envelope of FRS for 0.3 g and 0.6 g, and increased DEC FRS for Bunkered Building 2 represent envelopes for 0.6 g and 0.78 g FRS.

5.2 Definition of Seismic Input for Qualification of Safety-Related Equipment

5.2.1 OBE and SSE FRS for design based safety-related SSCs (Appendix A)

Appendix A FRS shall be applied in the case of:

- Procurement and qualification of spare parts or replacements of components, which were originally qualified for OBE and SSE. This includes alternate components, which may not be physically identical to the original, but require an equivalency evaluation to ensure that it will perform the design function of the component it is replacing.

- Modifications, where new components are attached to the existing buildings or embedment plates. Existing buildings and embedment plates remain qualified for OBE and SSE. It has been determined that no re-qualification for higher seismic levels is required in this case.

- Re-qualification of existing pipeline segments and mechanical components located between the tie-in point, where new systems are attached to the existing pipelines, to the nearest anchorage on each side. Such pipeline segments or mechanical components remain qualified for OBE and SSE. It has been determined that no requalification for higher seismic levels is required in this case.

- Seismic design of new or modified SSCs in the Main Island Structures, Essential Service Water Intake Structure and Ground Surface for OBE loading.

5.2.2 SSE for design basis modifications (Appendix B)

Appendix B FRS shall be utilized for design basis modifications in Main Island structures, Essential Service Water Intake Structure and Ground Surface for the following work:

- Analysis, design, and qualification of new SSCs, including connections from new SSCs to the tie-in point on the existing SSCs.

- Design of protective features for new SSCs in the cases in which new SSCs are designed in an area at which the non-seismically designed SSCs can represent potential "seismic two-over-one" hazards.

- Procurement and qualification of spare parts or replacement parts of the components which had previously been qualified in accordance with Appendix B.

- Assessments of existing equipment (i.e. buildings, embedment plates, piping systems, panels, cabinets, cable trays and conduits, which are important for mechanical integrity and functionality of new safety-related components that are qualified in accordance with Appendix B.

NOTE: No seismic upgrade is planned for the SSCs in the existing DG buildings. Therefore, the floor response spectra for 0.6 g PGA in the DG buildings are not provided.

5.2.3 DEC FRS (Appendix C)

Appendix C FRS shall be used where qualification for DEC seismic levels is required. Appendix C is applicable to the DEC equipment in Main Island structures, Essential Service Water Intake Structure and Bunkered Building 1.

NOTE: DEC FRS, contained in Appendix C, apply to the identical activities as noted above for Appendix B (see Section 5.2.2, Paragraph 2) with an exception that they apply to DEC.

5.2.4 Waste Manipulation Building 1 OBE and SSE FRS (Appendix D)

Appendix D FRS shall be used for SSC’s within the Waste Manipulation Building for the following work:

- Analysis, design, and qualification of new SSCs, including connections from new SSCs to the tie-in point on the existing SSCs.

- Design of protective features for new SSCs in which new SSCs are designed in an area at which the non-seismically designed SSCs can represent potential "seismic two-over-one" hazards.

- Procurement and qualification of spare parts or replacement parts of the components which had previously been qualified in accordance with Appendix D.

5.2.5 FRS of Bunkered Building 2 for increased OBE, DEC, and increased DEC (Appendix E).

Appendix E FRS shall be used for SSC's within the Bunkered Building 2 for the following work:

- Analysis, design, and qualification of new SSCs, including connections from new SSCs to the tie-in point on the existing SSCs.
- Design of protective features for new SSCs in which new SSCs are designed in an area at which the non-seismically designed SSCs can represent potential "seismic two-over-one" hazards.
- Procurement and qualification of spare parts or replacement parts of the components which had previously been qualified in accordance with Appendix E.
- For the qualification of safety-related major equipment -housed in Bunkered Building 2, the increased DEC FRS are used (envelope of 0.6 and 0.78 g PGA FRS). The safety-related major equipment includes: reservoirs, tanks, pumps, 6.3 kV and 400 V electrical equipment, distributions, ventilation systems and supporting systems.
- For the piping design, extending over the Bunkered Building2, underground yard and entering the Main Complex, the factor of 1.3 does not apply. Design peak ground accelerations for piping systems are increased OBE (0.3g PGA) and DEC FRS (Envelope of 0.60 and 0.3 g PGA FRS). Seismic loads shall be determined from OBE and DEC in-structure/yard response spectra and building differential displacements.

5.3 Damping

The FRS in this document are developed for equipment damping corresponding to 1, 2, and 4 percent of critical damping for the OBE event and 2, 3, 4, and 7 percent of critical damping for the SSE and DEC events. It is permissible to develop RRS at other damping values matching current industry practices, as long as the input accelerations to the analysis which generates the RRS comply with the original USAR commitments.

5.3.1 Equipment Testing

When equipment is qualified through testing, damping occurs as a consequence of the actual equipment physical properties and configuration, which in all likelihood is different from the specified damping value. The TRS developed from the test device motion should also be calculated for a range of damping values between 1/2 and 7 percent. Generally current industry practice as recommended per IEEE 344-1975 is to produce a TRS at 5 percent damping. If the TRS for a given damping value envelops the RRS for the same or lower damping value, the equipment is qualified.

5.3.2 Equipment Analysis

When equipment is qualified using a dynamic analysis, a mathematical model of the equipment is constructed.

As part of the analysis, a damping value characteristic of the equipment behavior must be specified to predict the equipment response. Damping values, expressed as a percent of critical damping are identified for different equipment and consider OBE and SSE conditions and are listed here:

Percent of Critical Damping

Component or Structure	Operating Basis Earthquake	Safe Shutdown Earthquake
Primary Coolant Loop System Components and Large Piping[1]	2	4
Equipment and Large Diameter Piping Systems, Pipe Diameter Greater Than 12 in.	2	3
Small Diameter Piping Systems, Diameter Less Than or Equal to 12 in.	1	2
Welded Steel Structures	2	4
Bolted Steel Structures	4	7
Pre-stressed Concrete Structures	2	5
Reinforced Concrete Structures	4	7
Control Rod Drive Mechanism and Support System	5	5
Fuel Assemblies		
- fundamental mode	20[2]	20
- other modes	10	10
Fuel Assemblies for Reactor Vessel and Internals response analysis	20	20

[1] Generally applicable to 12 in. or larger diameter piping.

[2] 10% mechanical damping uniform for all modes plus 10% Hydrodynamic mass damping for the fundamental mode only

5.4 Zero Period Acceleration

ZPAs are obtained from the individual FRS. The response spectra in this specification are plotted to 50 Hz and the corresponding accelerations are used as the ZPAs. It is acceptable to use the ZPA value for the qualification of equipment having natural frequencies above 50 Hz.

5.5 Rigidity Requirements

Equipment is categorized as being structurally rigid when it can be shown that its fundamental frequencies are greater than the frequencies contained in the applicable dynamic loadings. Dynamic qualification is simplified when equipment can be categorized as rigid. Rigid equipment may be qualified by static analysis methods using zero period accelerations (ZPA) as the input magnitude level rather than the generally higher spectral acceleration values. Determination of rigidity should be established considering fundamental frequencies in each of the three orthogonal directions, which the dynamic loading may influence.

Support structures that are rigid, do not amplify or modify dynamic loadings. Therefore, equipment attached to a rigid support can be qualified directly by using the applicable dynamic loading at the location of the support. Qualification by testing or analysis is simplified because the effects of the support need not be considered. However, the mass of the equipment attached to the support must be considered when determining the rigidity of the support.

For seismic loadings, the industry generally defines equipment to be rigid when its fundamental frequencies are 33 Hz or greater. The RRS for each applicable spatial direction should be individually considered and checked.

These rigidity requirements have implications on equipment previously qualified and installed which are relocated to other locations in the plant. These rigidity requirements may also exist when vendors generically qualify commonly used plant components only to 33 Hz for a typical seismic qualification.

5.6 Building Mounted Equipment

Equipment and systems attached directly to the structural walls and floors of the power plant buildings are seismically qualified using the applicable FRS presented in Appendixes A to E. The tables contained in the appendixes describe the buildings/elevations for which FRS are generated.

5.7 Panel/Cabinet Mounted Devices

Panels, cabinets and frame supports, because of their flexibility, generally amplify the vibrational motions of the structure to which they are attached. Components mounted on a panel may, therefore, be subject to seismic input motion much different than the FRS.

5.7.1 Qualification of a New Panel/Cabinet

Where new panels are being designed and fabricated by a vendor, the recommended practice is for the procurement documents to require the vendor to qualify the complete panel in accordance with IEEE-344. Also, it is recommended that this qualification be accomplished by testing in order to demonstrate operability of the electrical devices during a seismic event. Particular attention should be given to the following:

1. The TRS envelops the FRS for the panel location.

2. Sufficient monitoring is provided during the test to determine equipment function.

3. Sufficient monitoring is provided during the test to derive seismic response at representative device mounting locations to provide data to facilitate future changes.

4. Appropriate documentation is provided to demonstrate qualification and to facilitate future analysis.

Sometimes it is more economical to test the complete panel with dummy loads, or inoperable devices. In this situation, the seismic response at each (representative) component location must be documented and then each device must be tested separately for operability.

In other cases, the preferred approach is to develop a mathematical model of the panel, test the panel on a shake table or with vibrators, and then adjust the model characteristics to correspond to the test results. This method permits the seismic response at each component location to be calculated and is particularly useful when extensive modifications to the panel are anticipated. This approach also requires that each device be tested separately for operability.

5.7.2 Qualification of Additional or Replacement Components

If the new components are not identical to those being replaced, if they are being installed in a new position within a panel, or if they are a new addition to a panel, then the seismic response must be determined for the component location on the panel. When sufficient data is included in existing test reports, they can be used as a basis to determine this seismic response at the intended location of new components, but usually some calculations are necessary to develop the required response data. The preferred form for this data is a response spectra curve at an appropriate damping and with a ratio of peak to ZPA representative of the type of input motion. It is also desirable to characterize the type of input motion (e.g. random versus sine beat).

When existing panel qualification data is inadequate, or when the new components represent a significant addition of mass, more sophisticated approaches are required. This usually consists of developing a mathematical model of the panel or cabinet and then using this model to develop the required response spectra at the component mounting locations. In some cases, this analytical program can become very complex. If the mass addition is significant, it may be necessary to check the structural integrity of the panel. Also, it will be necessary to review the qualification of existing components to ensure that the changed response of the panel has not invalidated their qualification.

Once the panel response at the device mounting location is determined, it is necessary to determine the capability of the devices. Test data demonstrating the operability of the device is essential. This data may be in a variety of forms, but most often is represented in the form of a TRS or test RIM.

Components are usually qualified through a generic program or for another application. In this case a test report should be obtained. The report should be reviewed for the adequacy of test sequence (aging, radiation, seismic), and for adequacy of environmental conditions and seismic inputs.

For components not previously qualified, serious consideration should be given to substitution of a previously qualified component for the unqualified component because the cost of an independent qualification program is very high. If use of an unqualified component is required then a seismic test program is required and a generic RRS must be developed. In developing this test program and RRS, particular care should be taken to ensure that the appropriate input is used. This will generally mean the specification of both random and sine beat excitations. If possible, the seismic test should be part of an overall test sequence, which includes aging and radiation considerations.

For small rigid devices without moving parts, such as fuse blocks or insulators, a less demanding approach can sometimes be justified. Often this type of device can be qualified on the basis of structural properties alone or on the basis of simple static strength tests.

Once the panel response is determined, and data is available for the components, it must be shown that the TRS for the components envelops the RRS at the component mounting location. When comparing the TRS from the component qualification and the response curve for the intended panel location, particular care should be taken to assure that the appropriate input motion was used (random vs. sine beat) and that the damping of the device TRS equals or exceeds the damping of the RRS at the device mounting location.

If the component's TRS envelops the generated RRS, the component will be considered seismically qualified. However, if the TRS still does not envelop the component's RRS, design modifications to the panel may be necessary.

5.7.3 Qualification of Shop Fabricated Panels

Where new panels are simple in design, it is sometimes possible to seismically qualify them without testing a complete panel. One approach is to design the panel so that it is rigid and then perform an analysis to demonstrate that it has no natural frequencies below 33 Hz. Since the panel is rigid, it will not amplify its input motion and the appropriate FRS can be used as the RRS for device qualification. However, an analysis must also be done to ensure the structural integrity of the panel.

If the panel is not rigid, then a dynamic analysis using lumped mass stick models, finite element, or other methods may be performed. The analysis is conducted using the FRS for the panel location as input, and component mounting point RRS are developed. As described previously, the resulting RRS are compared to TRS for the devices to be mounted in the panel, and an analysis demonstrating the structural integrity of the panel must be performed.

5.8 Piping Mounted Equipment

If the fundamental frequency of the supporting pipe including the mass of all attached devices is above RIGID FREQUENCY, the equipment shall be considered as though attached to the piping support, and the floor RESPONSE SPECTRUM envelope shall be used to qualify the supported equipment.

If the fundamental frequency of the supporting pipe is below RIGID FREQUENCY, the equipment shall be modeled in the piping system to obtain required response at attachment points.

5.9 Requirements for Safety Impact Items

Safety impact items are those items whose function is not required to maintain nuclear safety but whose failure due to seismic or other loads could have substantial impact on safety (Seismic Category I) related systems, equipment or components, the reactor coolant pressure boundary, the safety of control room personnel or potential offsite radiological exposures.

Safety impact items are also referred to as anti-falldown or two over one items implying items physically located over a Category I item. Safety Impact Items should be designed for same design earthquake intensity as Seismic Category I items (e.g. SSE or DEC level) as per requirements of RG 1.29, paragraph C.2. In order to distinguish between Safety Category I and Safety Impact Items in EAM MECL plant database, the value of column "seismic" for the Safety Impact Items shall be set to value "II".

During the development of design basis modifications or DEC upgrades involving safety-related equipment, the Responsible Engineer shall investigate and determine potential safety impact items through a site area walk-down. Potential and confirmed safety impact items are to be identified, evaluated and dispositioned in accordance with approved procedures.

Where disposition of a potential safety impact item requires a resolution involving design and qualification efforts, the requirements are as follows:

- Sufficient analysis, testing or combination thereof must be performed to assure the stability and integrity of the body of the equipment as well as the specific mounting detail being used.

- The design of a safety impact item can be done consistent with comparable seismic category 1 listed equipment or alternate criteria. Alternate criteria should include reasonable conservatism to account for the lack of material traceability and control as with safety related equipment.

- Safety impact items which jeopardize essential items should be designed for the same basic load combinations and damping values as the essential components.

- Other non-seismic vibrational loads such as diesel engine vibration or other rotating equipment need to be considered and applied as applicable.

- Note that safety impact items need not be designed to the same allowables as seismic category 1 equipment. It is not required to keep design stresses within yield stress limitations, provided it is shown that stresses do not reach ultimate strength and cause failure.

- Safety impact items have no predetermined quality assurance program. The responsible engineer shall specify the need for QC inspections and provide all specific criteria and requirements to allow implementation of an inspection.

5.10 Acceptance Criteria

Acceptance criteria shall be developed separately as required to meet the requirements of the specific task or project considering the different requirements for existing (design-based) SSCs, new SSCs in the scope of design of new buildings or for design basis modifications, and for DEC criteria, as determined to meet the requirements of this specification.

Acceptance criteria vary with the method of qualification used and the type of equipment.

Allowable stresses as determined from applicable codes such as AISC and ASME are used as limiting conditions for analytical methods. Maximum stresses resulting from combined loads shall be within the limits as specified by the applicable code and equipment specifications.

Maximum deformation and deflections resulting from the application of the combined loads shall also be within the established limits of these codes and specifications. Where clearances and gaps are essential for continuous function and operability, they shall be checked against their established limitations.

The level of the established allowable stresses, deformations or necessary clearances is dependent on the plant conditions and design basis. Increases in allowable stresses are permitted. Other factors typically used for such conditions as fatigue, impact or thermal gradients where reductions or adjustments in allowable stresses are required, must still be considered and used.

Where testing methods are used for qualification, the test response spectra must envelope the required response spectra along the entire frequency range and with the required 10% margin as specified by IEEE 323. Where testing is performed to meet the requirements of a RIM curve, the test output must also meet or exceed that required level.

Acceptance criteria for safety impact items can vary depending on the specific physical characteristics and expected failure mechanisms. Mounting and structural integrity are minimum requirements to be maintained along with other possible functions depending on the potential effects on the adjacent safety related equipment.

6.0 DOCUMENTATION

6.1 General

The documentation for the equipment shall demonstrate that the equipment meets its performance requirements before, during, and after being subjected to the seismic accelerations for which the equipment is to be qualified in accordance with the seismic criteria of this Specification. Refer to NEK Engineering Procedures documentation preparation requirements. Qualification documentation shall also include the basis for qualification and selection of the method and approach used for existing design-based SSCs, new SSCs, or if DEC criteria were selected and utilized.

6.2 Analytical Data

If proof of performance is obtained by analytical means, the report shall be presented in a step-by-step form which is readily understandable by persons skilled in such analysis. The format for the presentation shall be as follows:

a. Scope

The equipment shall be identified, a brief description of the overall problem shall be included, and the scope of the specific problems covered by these calculations shall be given.

b. Summary of Results or Conclusions

1. A brief summary of the results, including the NATURAL FREQUENCIES obtained from the calculations, shall be included.

2. A concise statement of the conclusions reached as they relate to the stated purpose shall also be given.

c. Load Criteria and Assumptions

The loads considered in the calculations and any assumptions made in converting the load criteria to actual load combinations used for calculations shall be given.

d. Methods of Analysis

1. The methods of calculations used which include the analytical equations and their development from basic principles or authoritative reference shall be stated.

2. Included also shall be any assumptions made as to boundary or initial conditions and any limitations on the applicability of the calculations performed.

3. If a computer program is being used, the documentation which established its validity shall be specifically referenced. The validity of a program can be established by one of the following procedures:

(a) The computer program is a program that is available to the public domain and that has had a history of use to justify its applicability and validity without further demonstration and that is recognized as being applicable and valid.

(b) The computer program's solutions to a series of test problems, with accepted results, have been demonstrated to be substantially identical to those obtained by a computer program as described in sub-item d.3.a. above. The test problems shall be demonstrated to be similar to or within the range of applicability for the actual design problems analyzed with the computer program to justify acceptability of the program.

APPENDIX A

TO

SP-S702-044687-000

FLOOR RESPONSE SPECTRA CURVES FOR SAFETY RELATED BUILDINGS/STRUCTURES FOR OPERATING BASIS EARTHQUAKE (OBE) AND SAFE-SHUTDOWN EARTHQUAKE (SSE)

KRSKO NUCLEAR POWER PLANT
KRSKO, SLOVENIA

Floor Response Spectra Figure Matrix
for
Main Island

Building	Elevation	FRS Figure #			
		OBE		SSE	
		Horizontal	Vertical	Horizontal	Vertical
Reactor Building Base	98.78 m	A1	A2	A3	A4
Interior Structure	100.3 m	A5	A6	A7	A8
	107.62 m	A9	A10	A11	A12
	115,55 m	A13	A14	A15	A16
Containment Vessel	127.48 m	A17	A18	A19	A20
	140.24m	A21	A22	A23	A24
	153.29 m	A25	A26	A27	A28
Shield Building	136.21 m	A29	A30	A31	A32
	156.74 m	A33	A34	A35	A36
Auxiliary Building	100.3 m	A37	A38	A39	A40
	107.62 m	A41	A42	A43	A44
	115.55 m	A45	A46	A47	A48
	123.17 m	A49	A50	A51	A52
Intermediate Building	100.3 m	A53	A54	A55	A56
	107.62 m	A57	A58	A59	A60
	115.55 m	A61	A62	A63	A64
	123.17 m	A65	A66	A67	A68
Control Building	100.3 m	A69	A70	A71	A72
	107.62 m	A73	A74	A75	A76
	115.55 m	A77	A78	A79	A80
	123.17 m	A81	A82	A83	A84
Fuel Handling Building	100.3 m	A85	A86	A87	A88
	107.62 m	A89	A90	A91	A92
	115.55 m	A93	A94	A95	A96
	134.35 m	A97	A98	A99	A100
Drum Storage Area	100.3 m	A101	A102	A103	A104
	107.62 m	A105	A106	A107	A108
	115.55 m	A109	A110	A111	A112
	123.17 m	A113	A114	A115	A116

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g's.
2. Horizontal Floor response spectra envelop both the North-South and East-West floor response spectra
3. For Component Cooling Building FRS, use the FRS for the Auxiliary Building.

<u>Floor Response Spectra Figure Matrix</u>
<u>for</u>
<u>Essential Service Water Intake Structure</u>

Building	**Elevation**	**FRS Figure #**			
		OBE		**SSE**	
		Horizontal	**Vertical**	**Horizontal**	**Vertical**
Essential Service Water Intake structure	ALL	A117	A118	A119	A120

Notes:

1. Frequency in Hz (cycles per second) and Acceleration in g's.
2. Horizontal Floor response spectra envelop both the North-South and East-West floor response spectra

Floor Response Spectra Figure Matrix
for
Diesel Generator Building, Free Field Ground Surface, and Radwaste Storage Building

Building	**Elevation**	**FRS Figure #**			
		OBE		**SSE**	
		Horizontal	**Vertical**	**Horizontal**	**Vertical**
Diesel Generator Building	ALL	A121	A122	A123	A124
Free Field Ground Surface	100.0 m	A125	A126	A127	A128
Radwaste Storage Building	100.15 m	A129		A130	
	108.05 m	A131	A132	A133	A134

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g's.
2. Horizontal Floor Response Spectra envelop both the East-West and North-South floor response spectra

Floor Response Spectra Figure Matrix
for
Bunkered Building 1

BB1 Location	Elevation	FRS Figure #					
		OBE			SSE		
		North-South	East-West	Vertical	North-South	East-West	Vertical
DG Slab Area	0.30 m	A135	A137	A139	A136	A138	A140
DG Roof Area	8.70 m	A141	A143	A145	A142	A144	A146
Battery and Battery Charger Room	0.30 m	A147	A149	A151	A148	A150	A152
Cable Room (018)	-2.20 m	A153	A155	A157	A154	A156	A158
Cable Room	-2.20 m	A159	A161	A163	A160	A162	A164
Switchgear Room	0.30 m	A165	A167	A169	A166	A168	A170
400 V Switchgear Room	0.30 m	A171	A173	A175	A172	A174	A176
ECR and TSC	4.20 m	A177	A179	A181	A178	A180	A182
Roof Area	8.70 m	A183	A185	A187	A184	A186	A188
ECR HVAC Room Roof	13.30 m	A189	A191	A193	A1F90	A192	A194

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g’s.
2. The floor response spectra results due to the design basis OBE and SSE have been increased by a factor of 1.5 for the BB1. The 1.5 factor represents an additional conservatism to the design basis values.

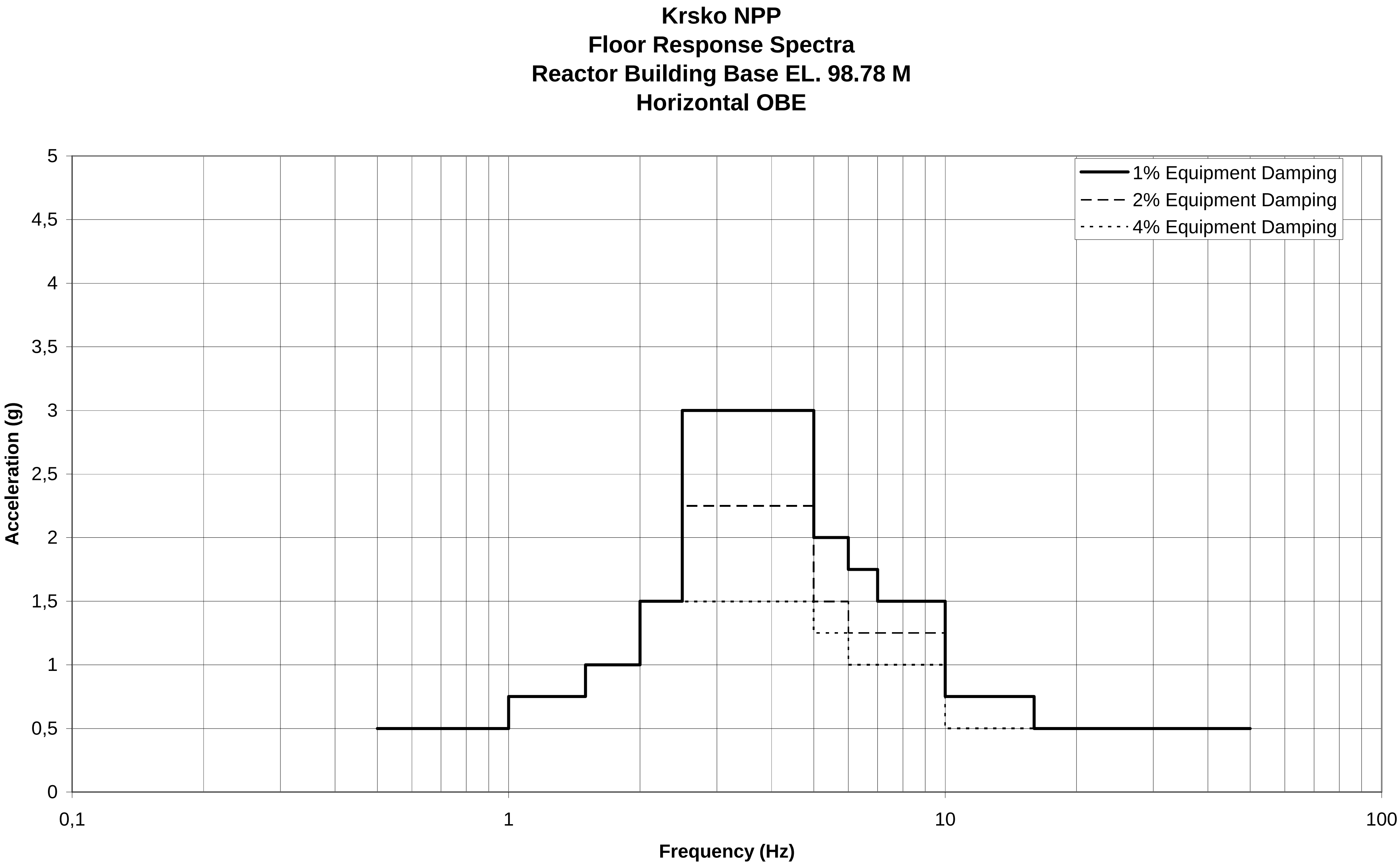

Krsko NPP
Floor Response Spectra
Reactor Building Base EL. 98.78 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A1

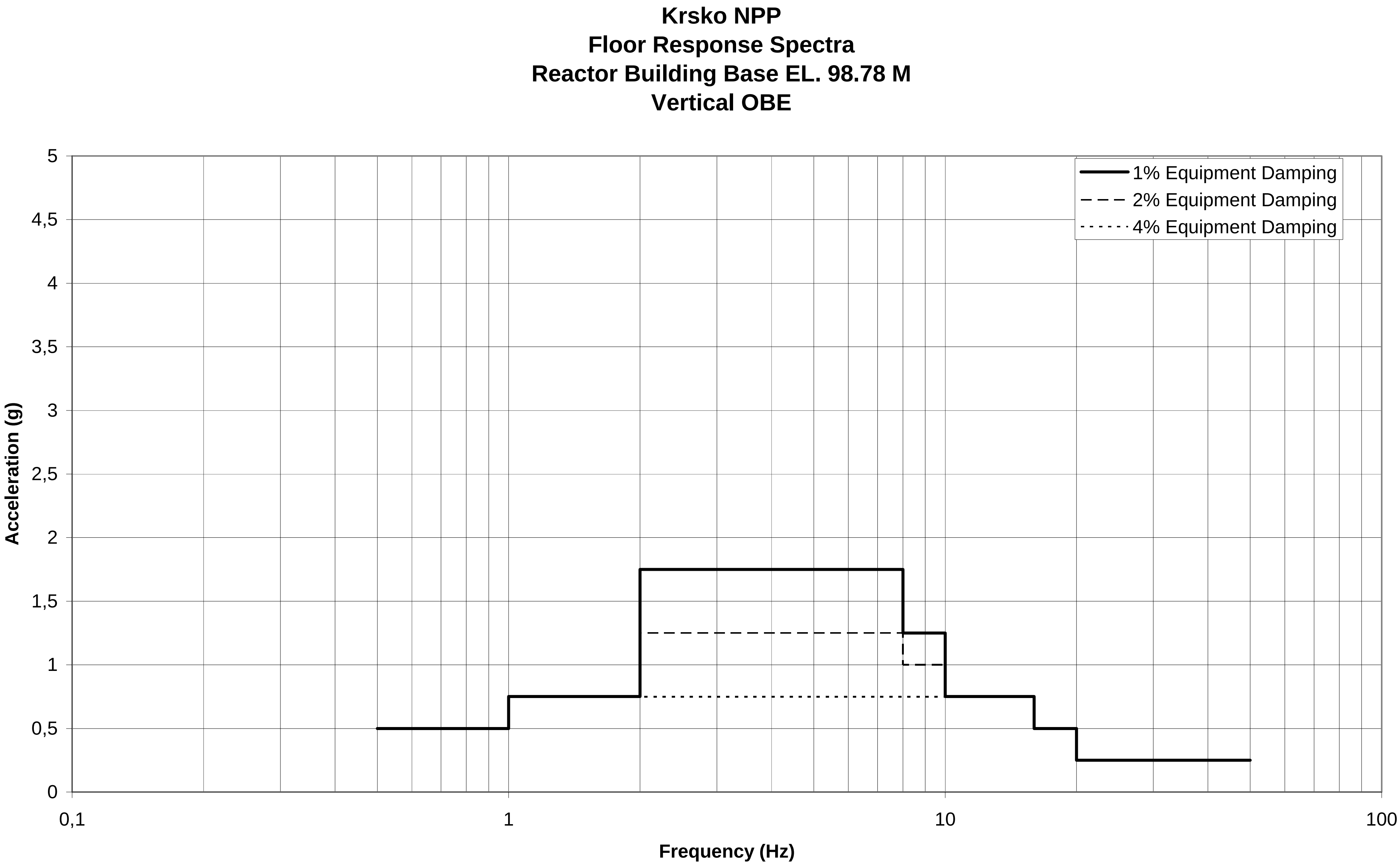
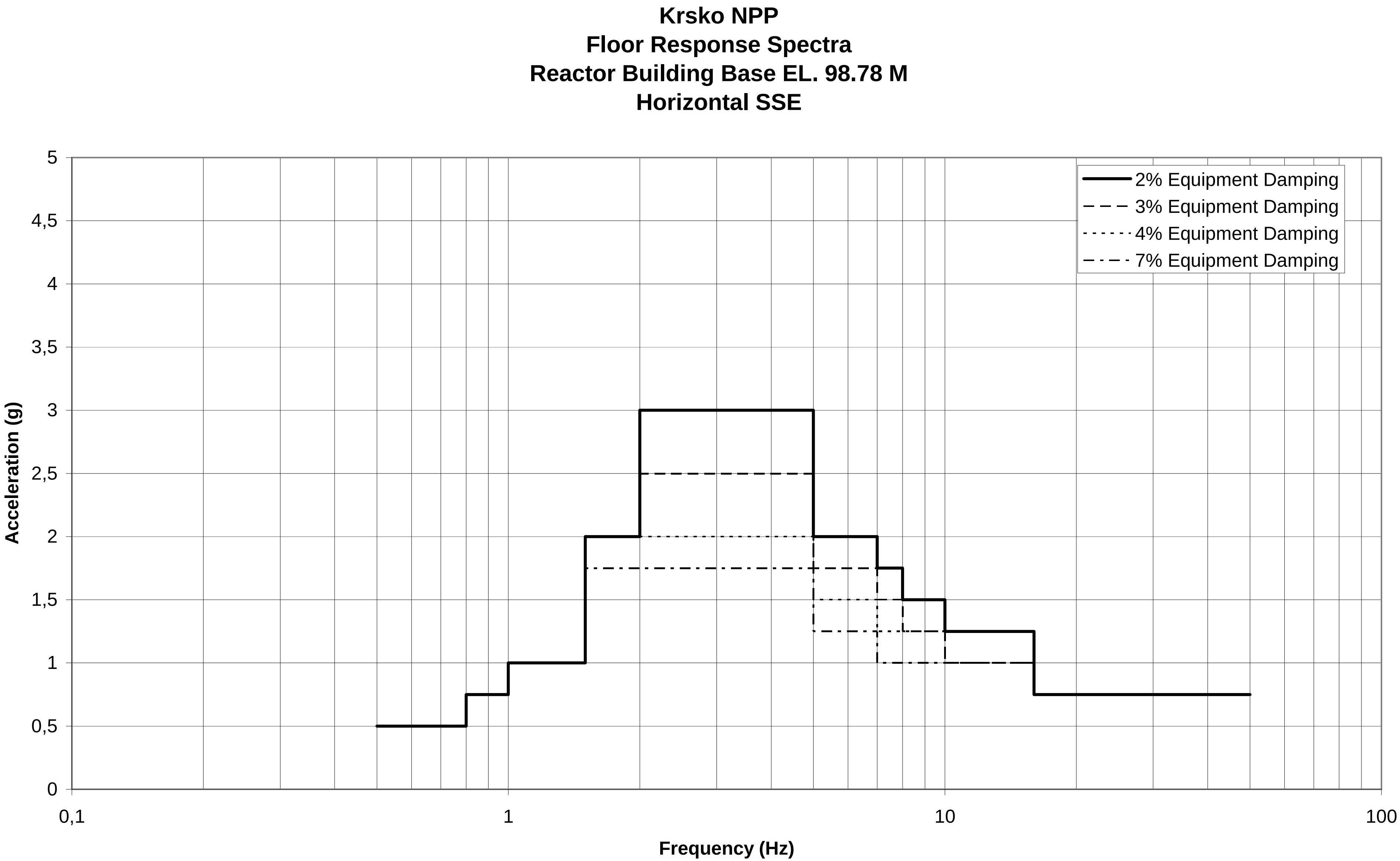
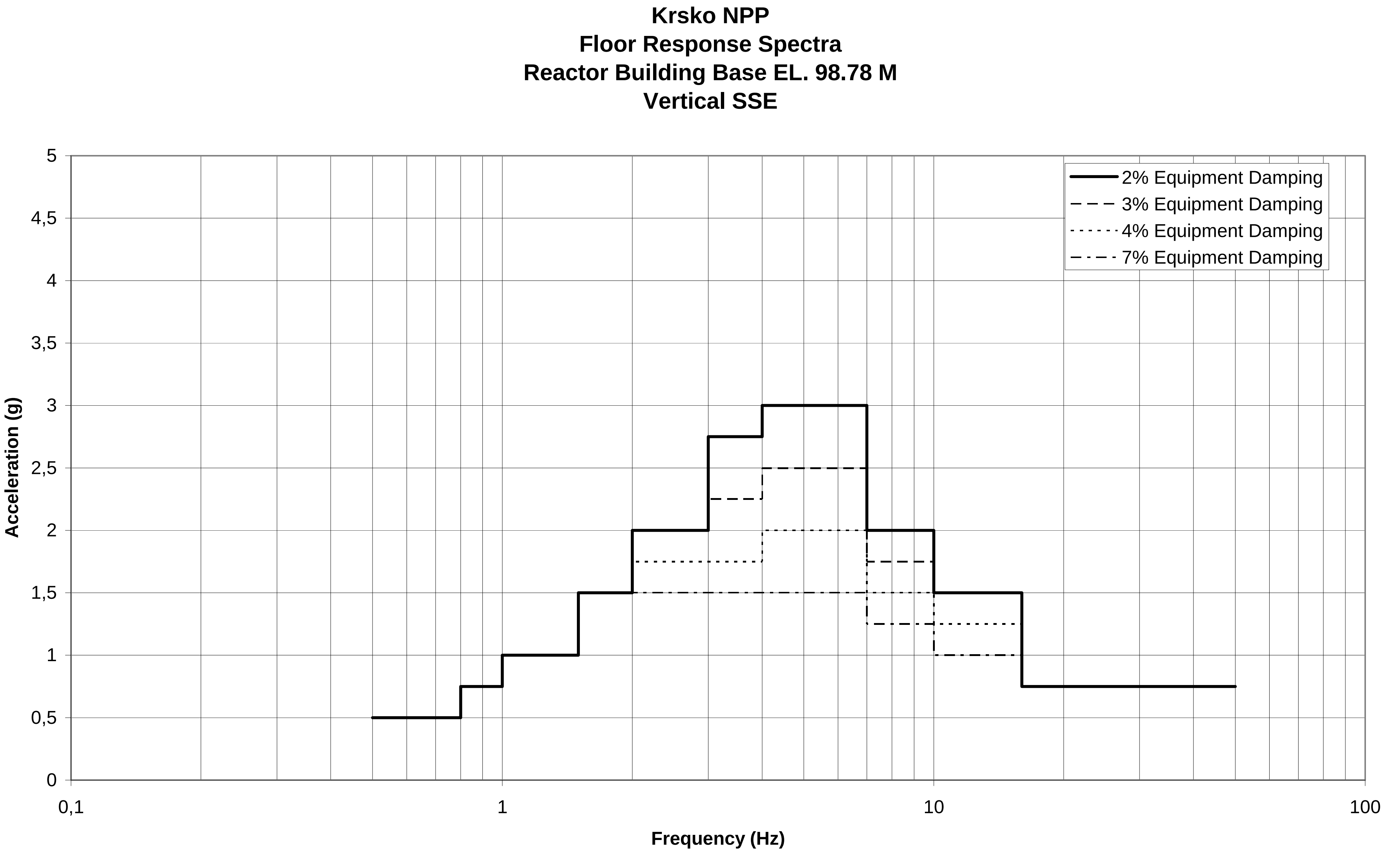
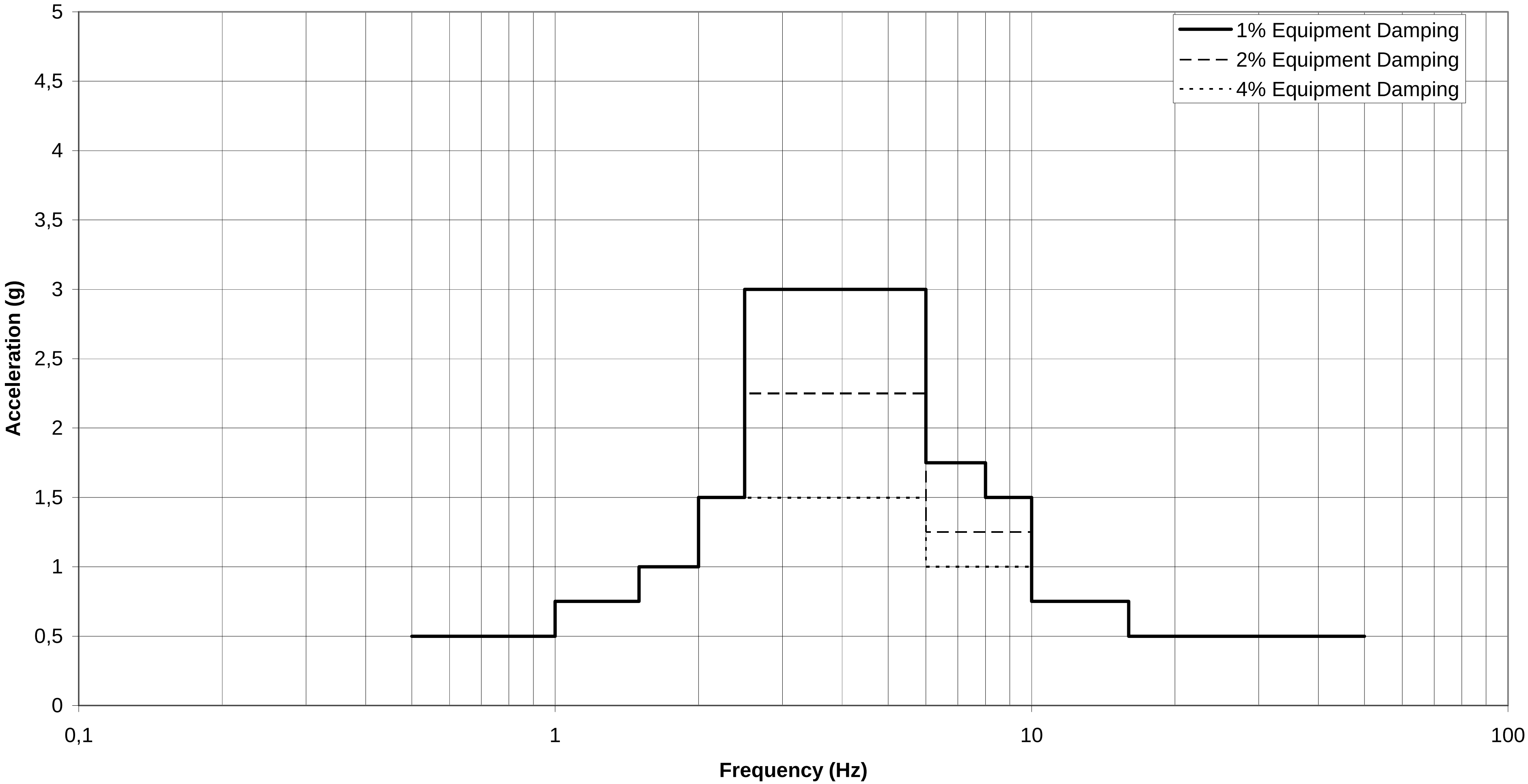

Krsko NPP
Floor Response Spectra
Reactor Building Base EL. 98.78 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A2


Krsko NPP
Floor Response Spectra
Reactor Building Base EL. 98.78 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Reactor Building Base EL. 98.78 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Krsko NPP
Floor Response Spectra
Interior Structure EL. 100.3 M
Horizontal OBE



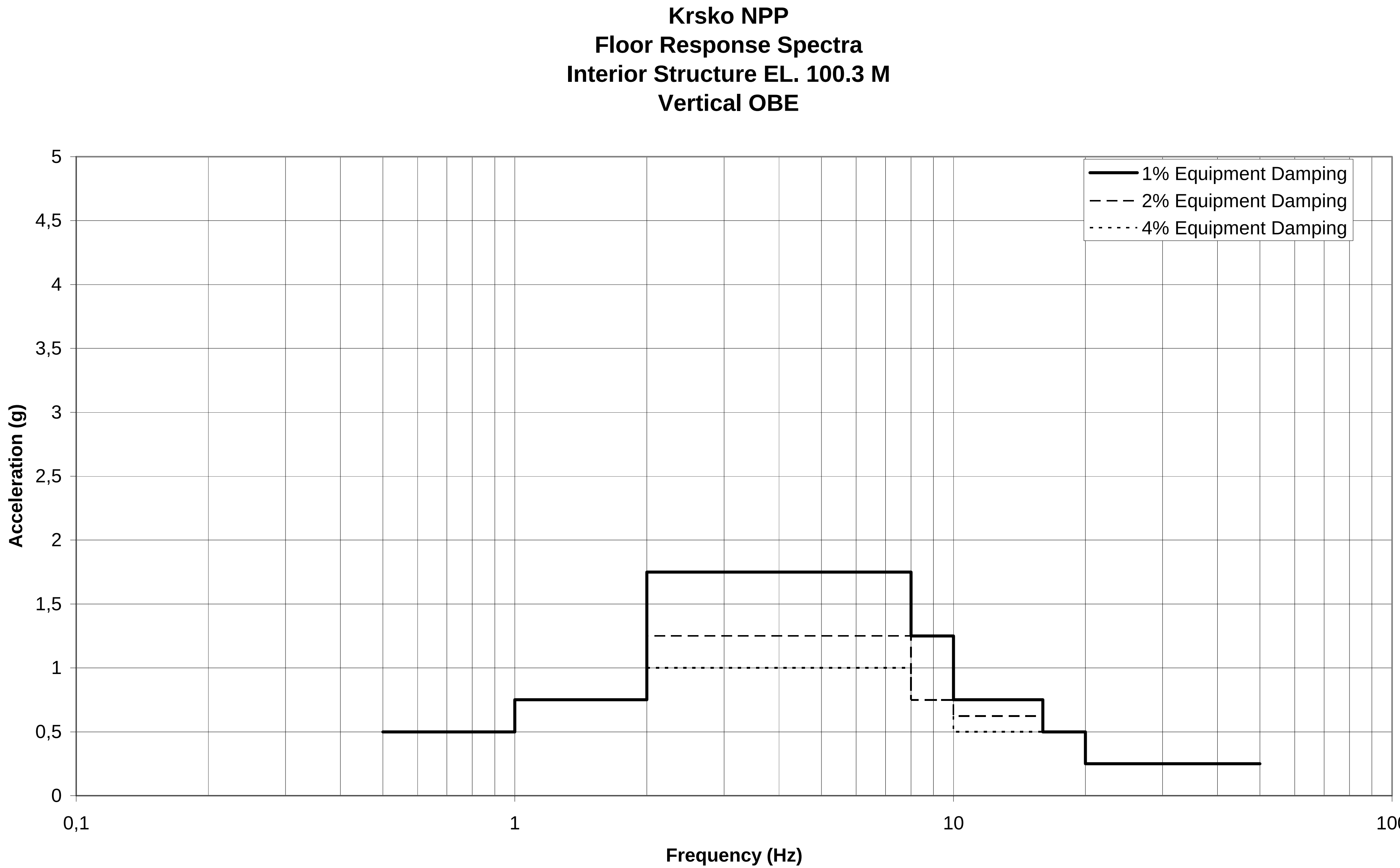
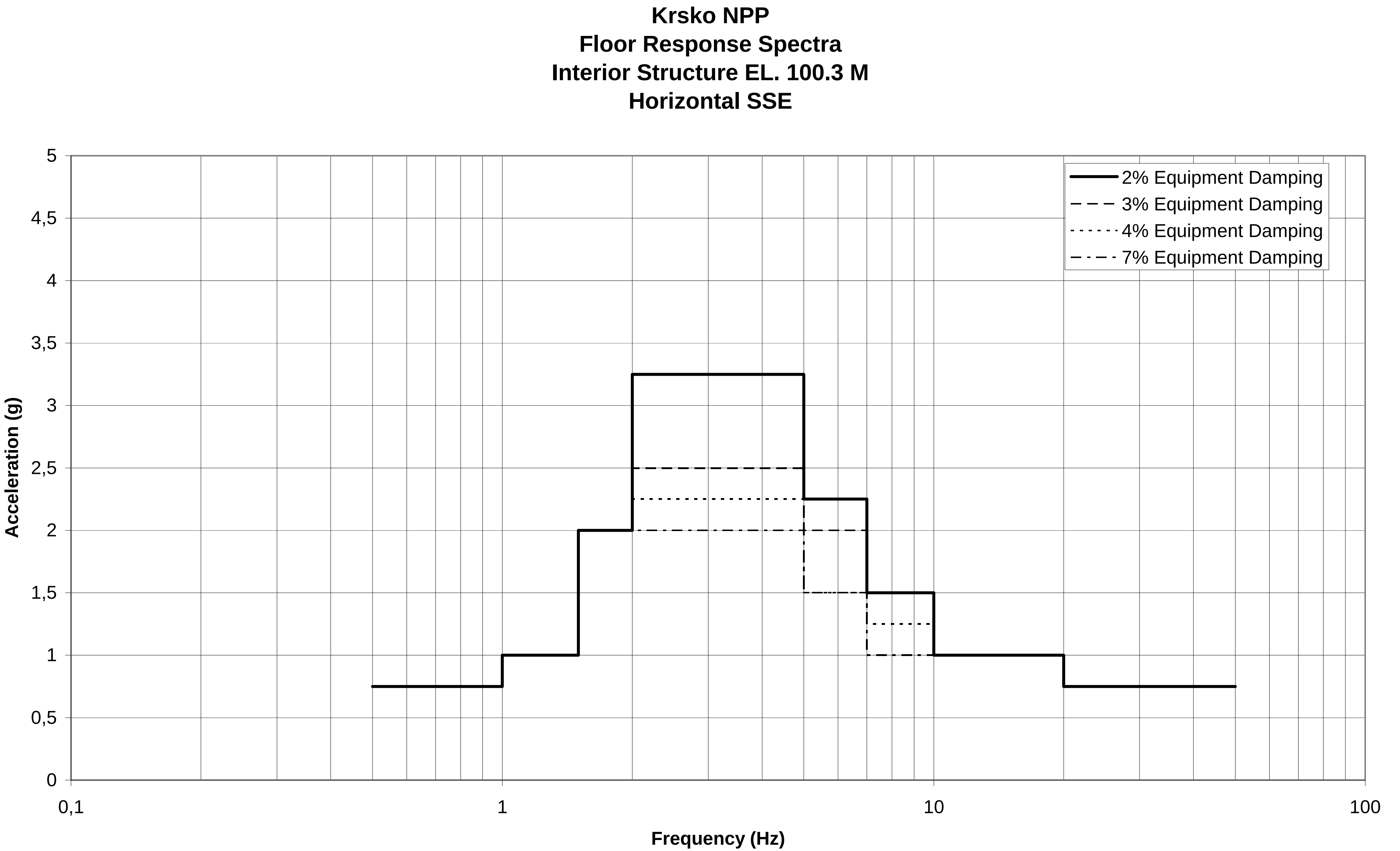
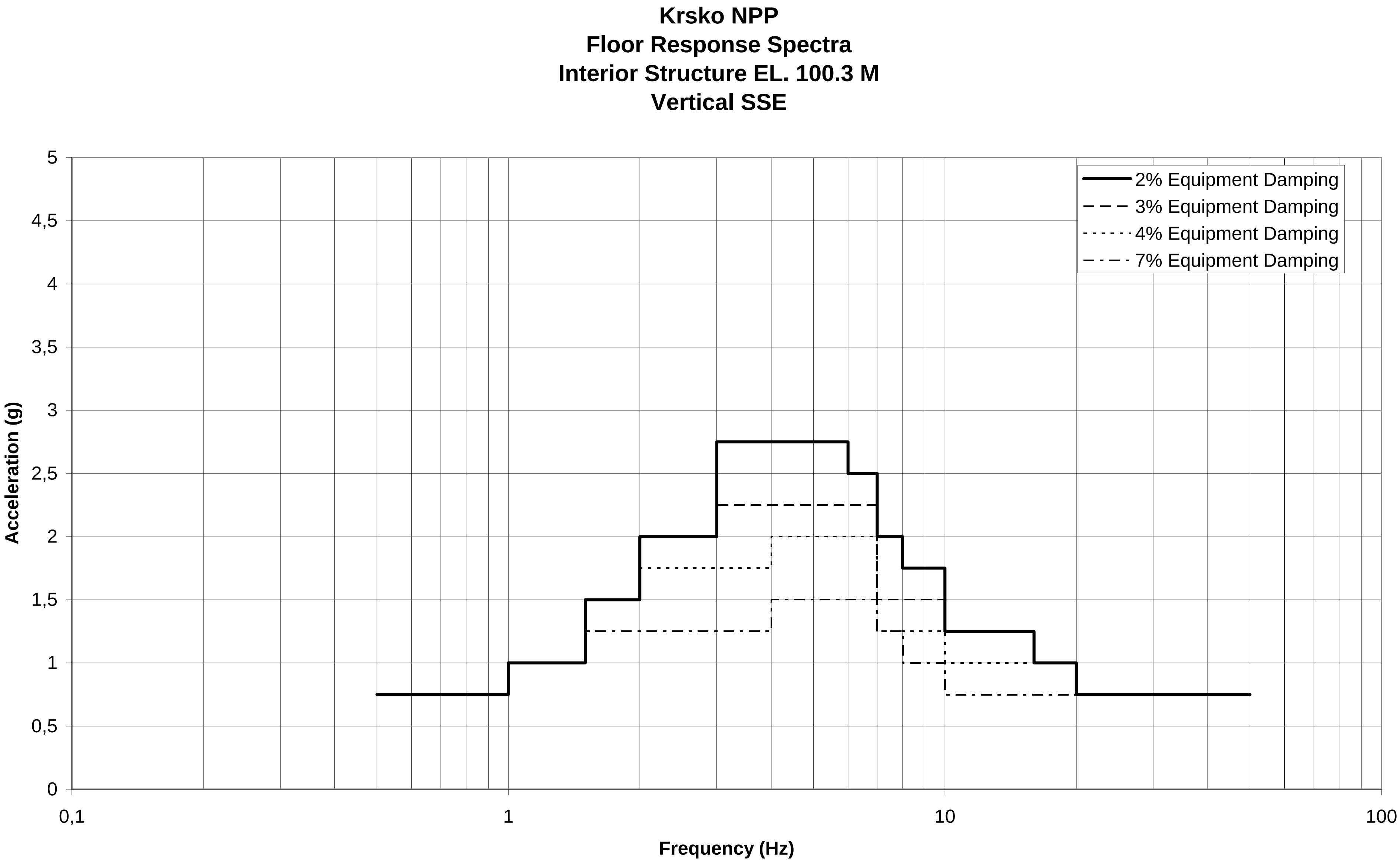
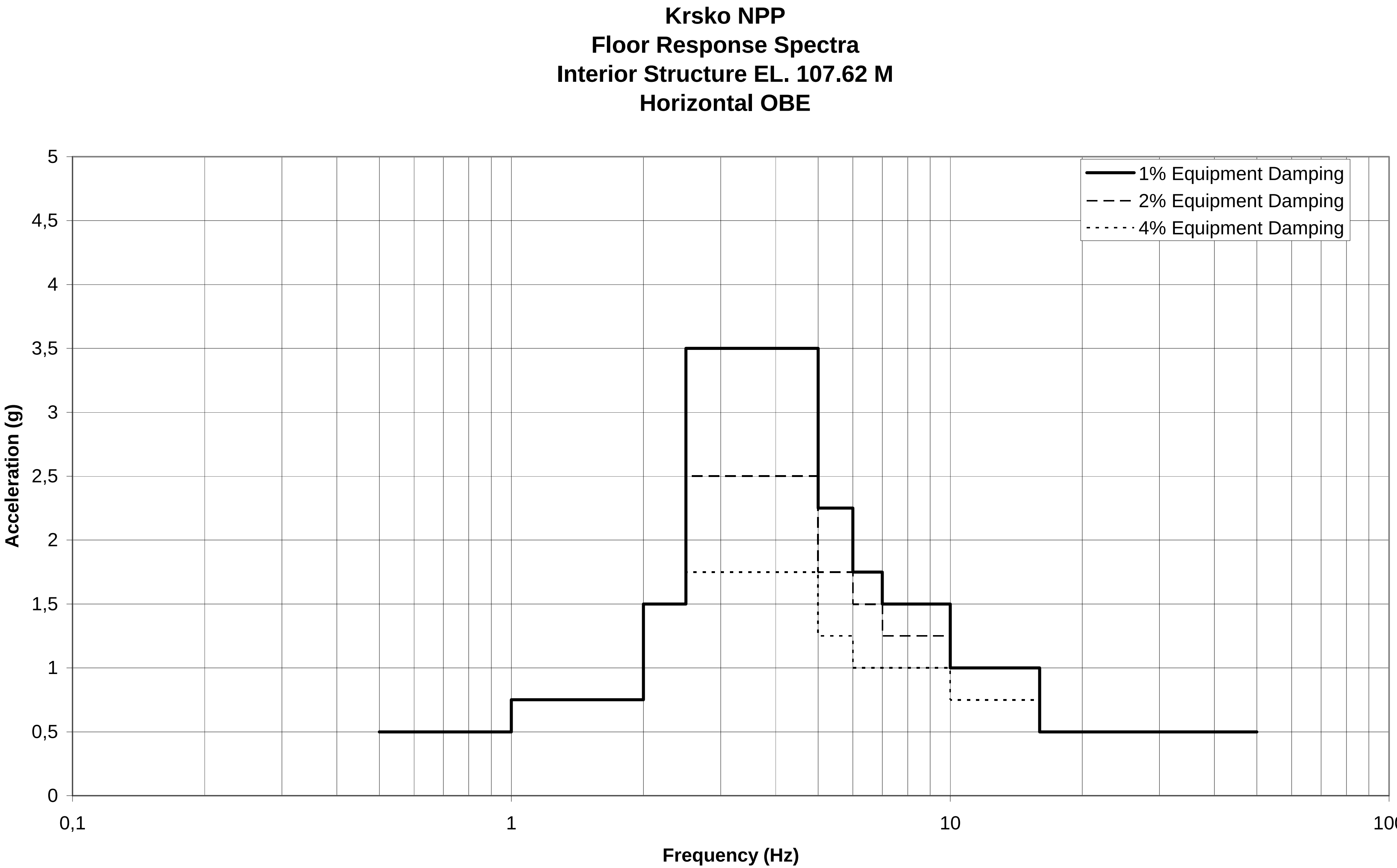

Krsko NPP
Floor Response Spectra
Interior Structure EL. 100.3 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A6


Krsko NPP
Floor Response Spectra
Interior Structure EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Interior Structure EL. 100.3 M
Vertical SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


Krsko NPP
Floor Response Spectra
Interior Structure EL. 107.62 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

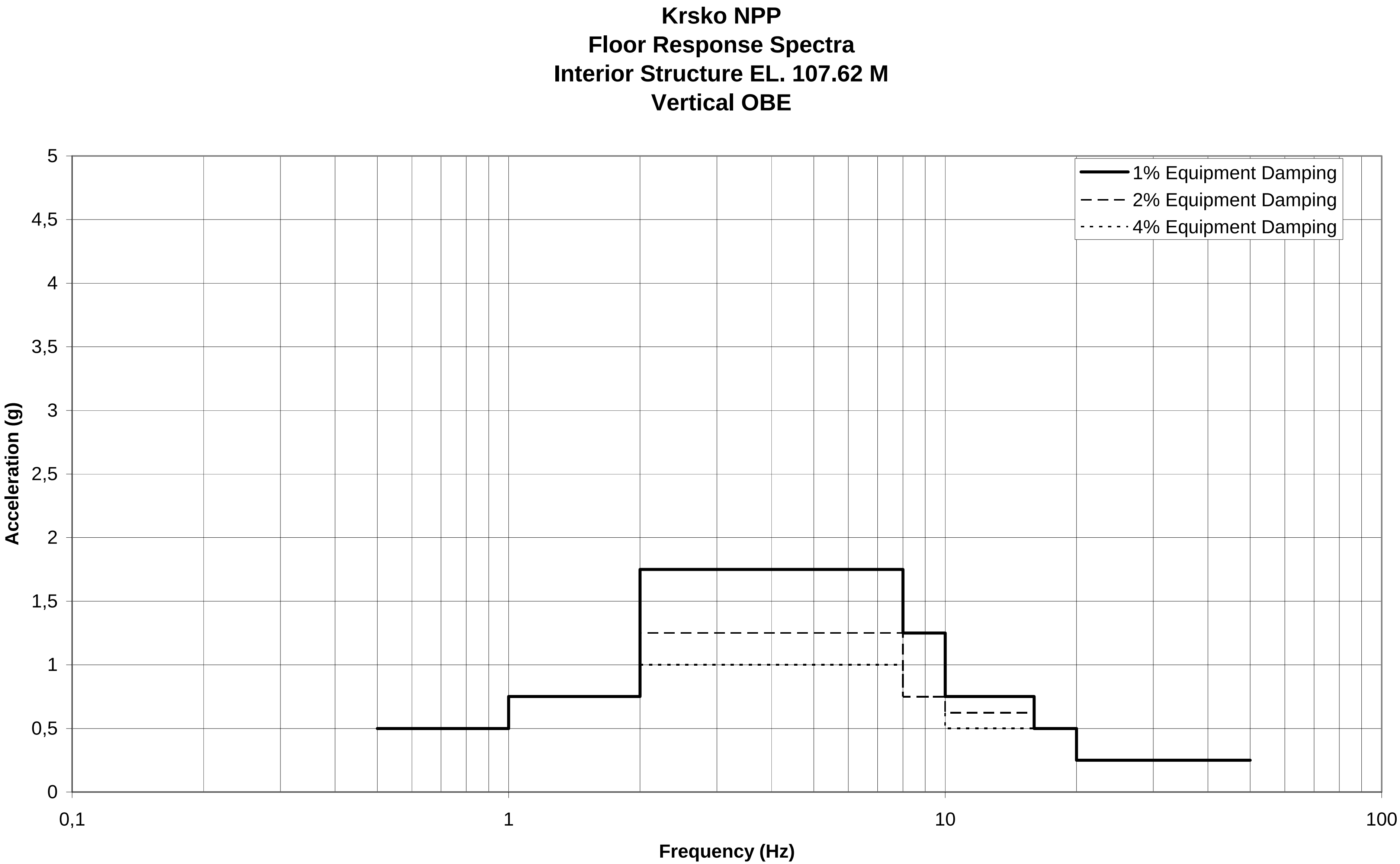

Krsko NPP
Floor Response Spectra
Interior Structure EL. 107.62 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A10

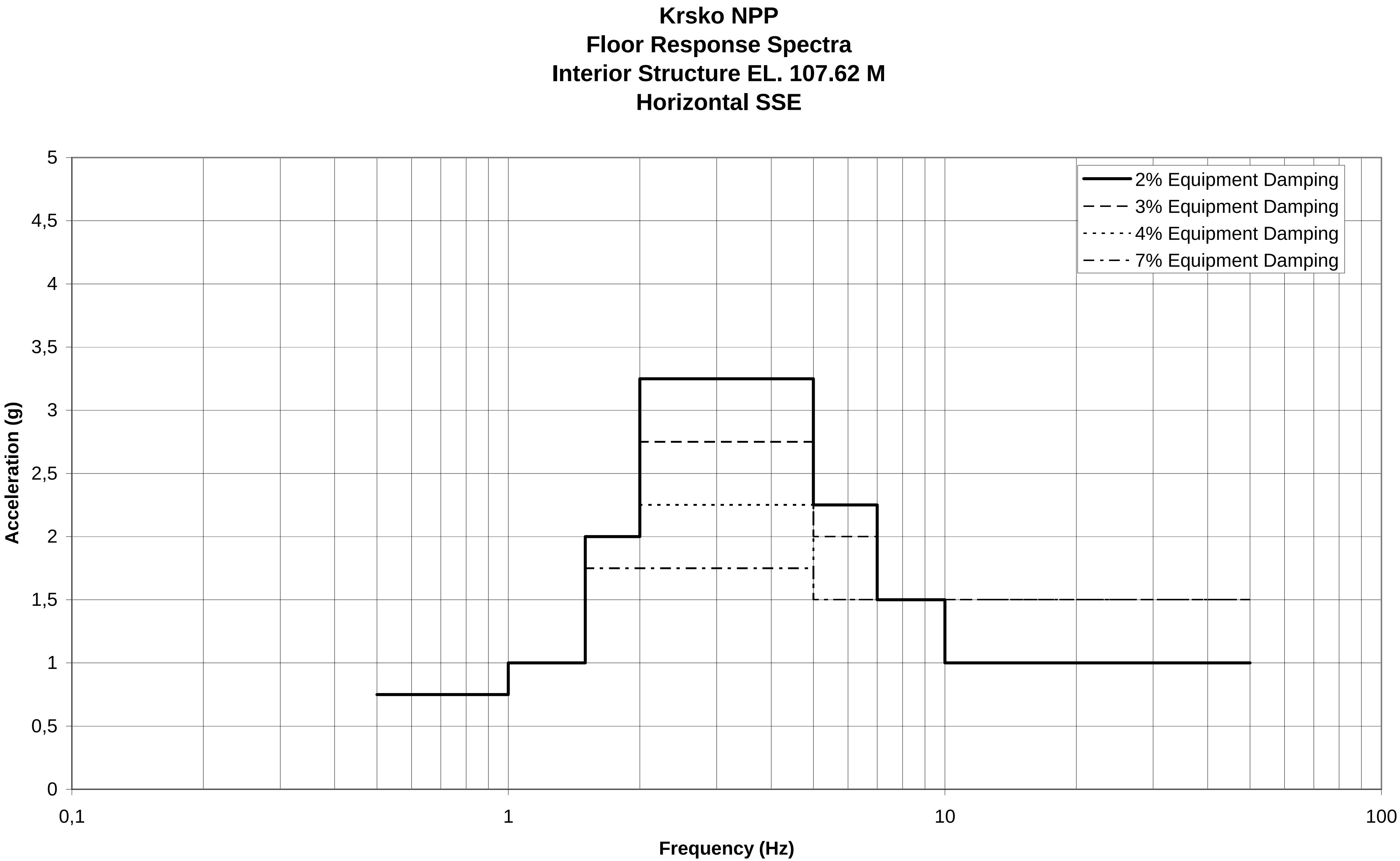
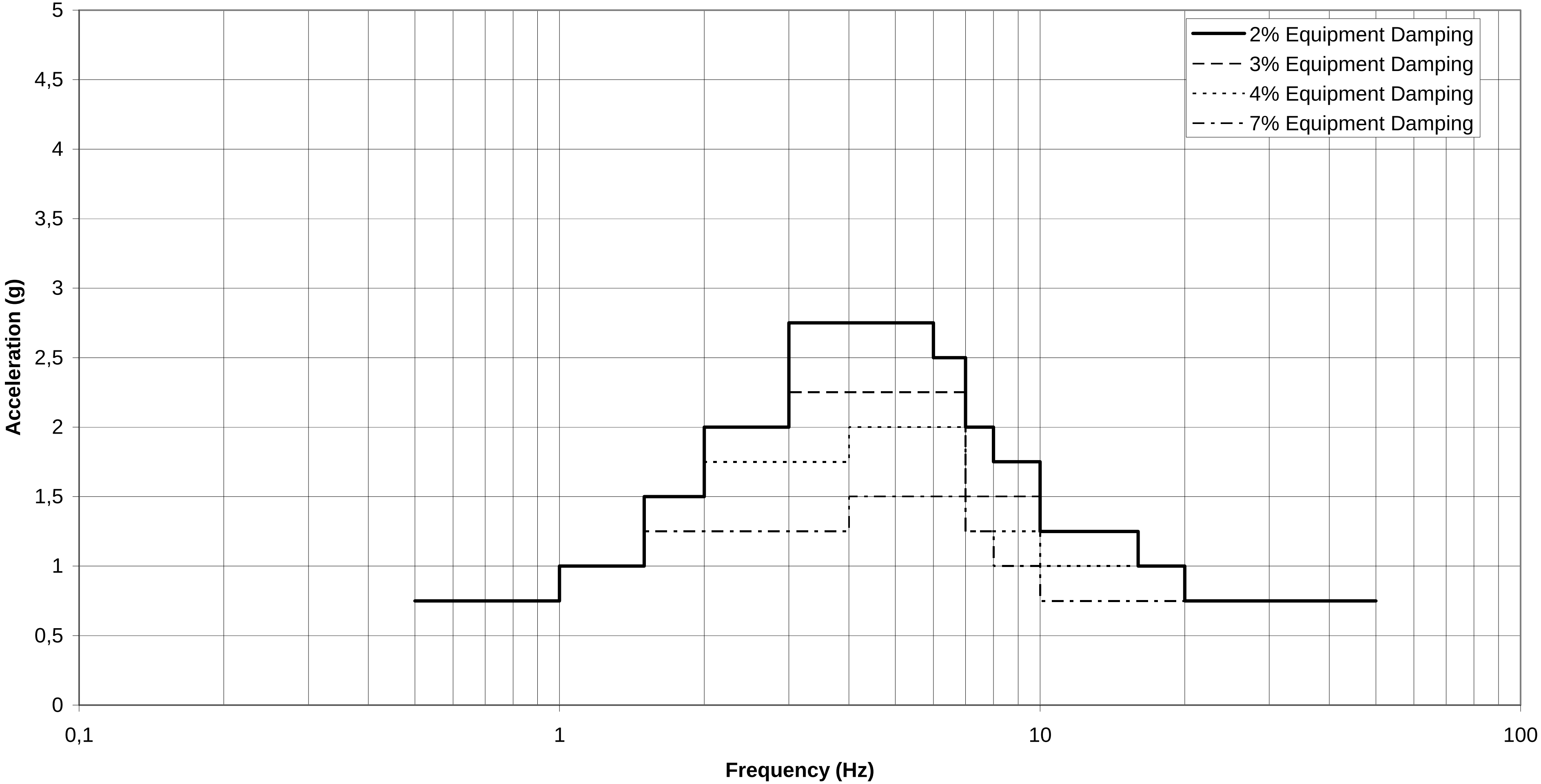
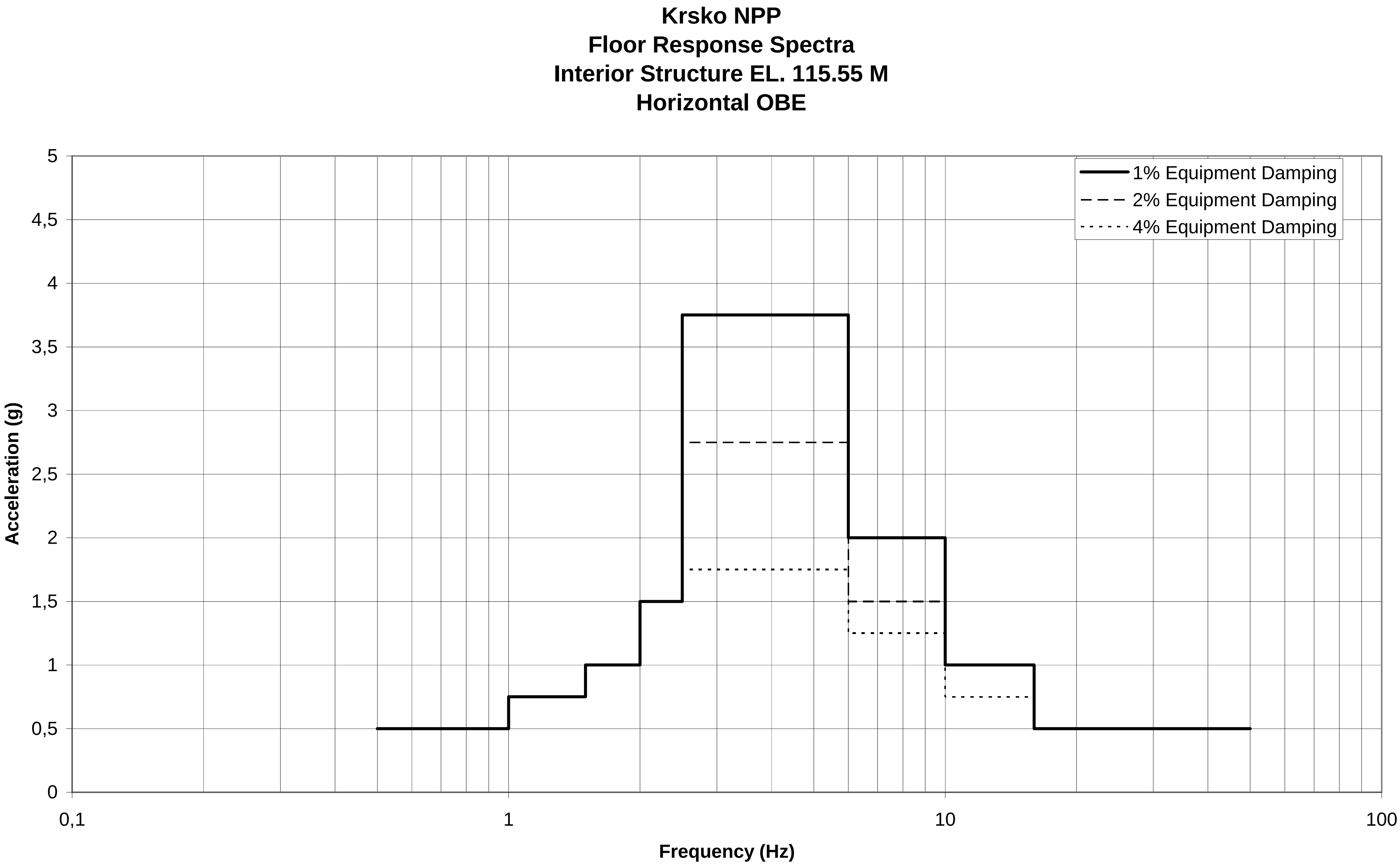
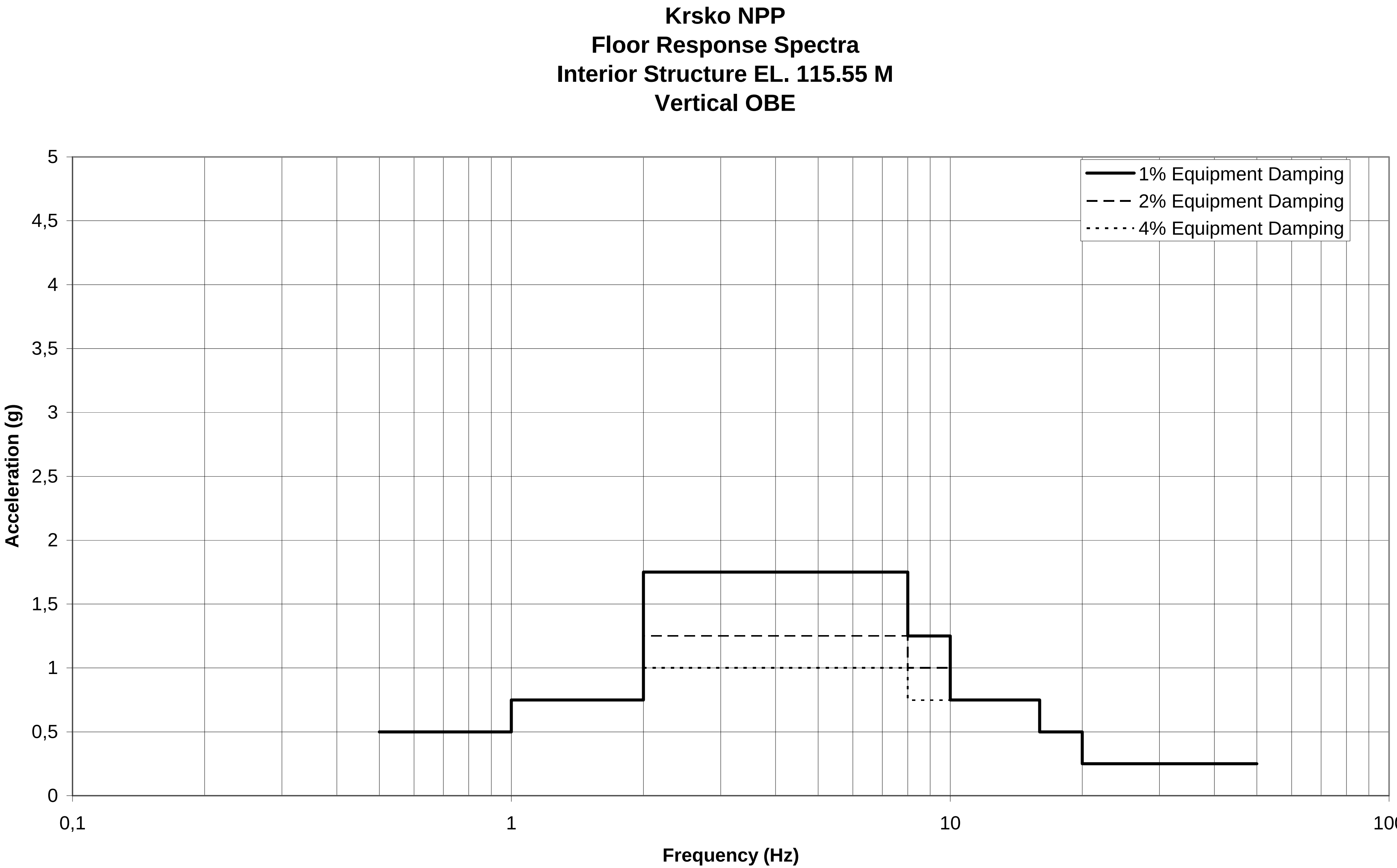

Krsko NPP
Floor Response Spectra
Interior Structure EL. 107.62 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

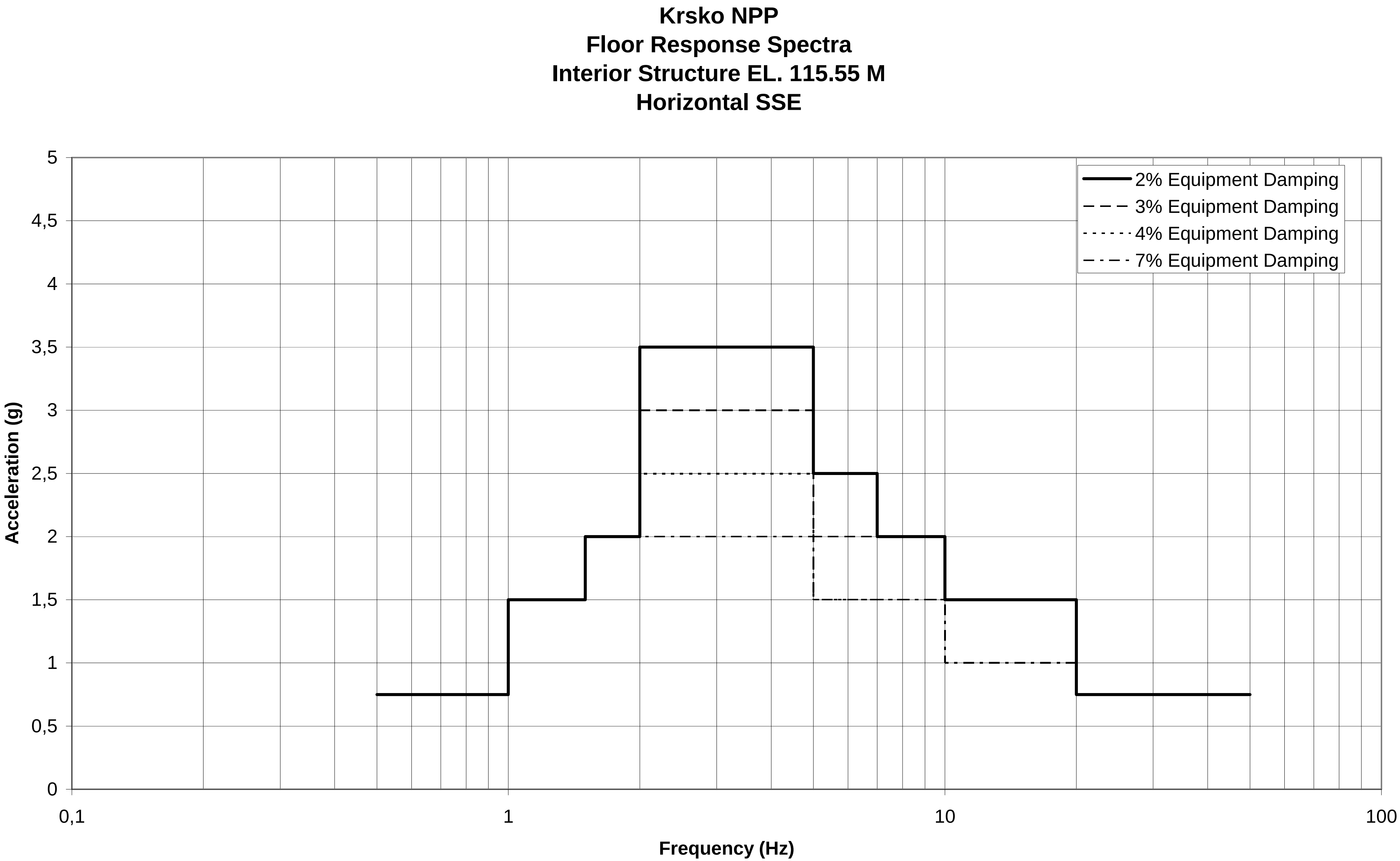
Figure A11

Krsko NPP
Floor Response Spectra
Interior Structure EL. 107.62 M
Vertical SSE




Krsko NPP
Floor Response Spectra
Interior Structure EL. 115.55 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Interior Structure EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Interior Structure EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

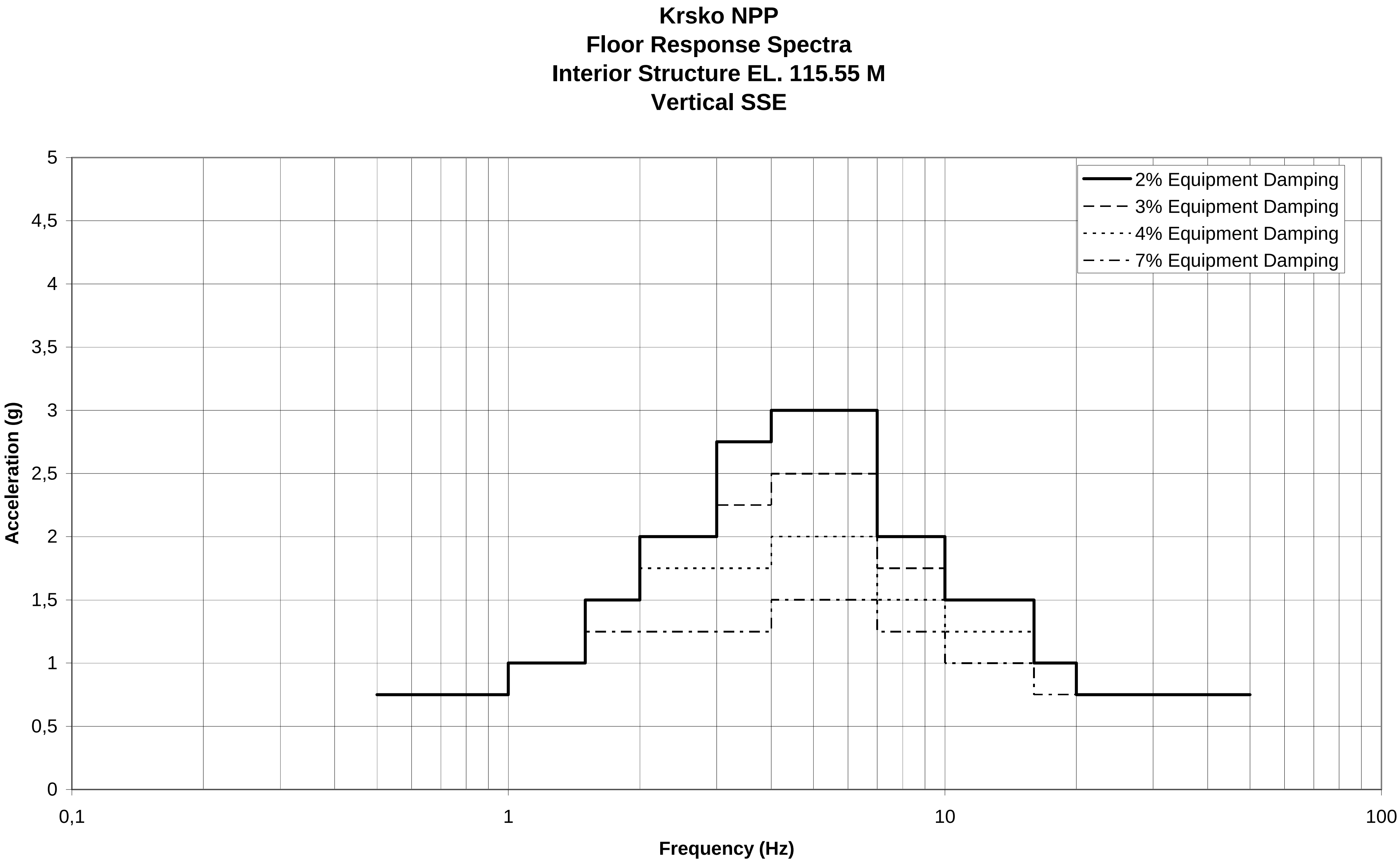

Krsko NPP
Floor Response Spectra
Interior Structure EL. 115.55 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A16

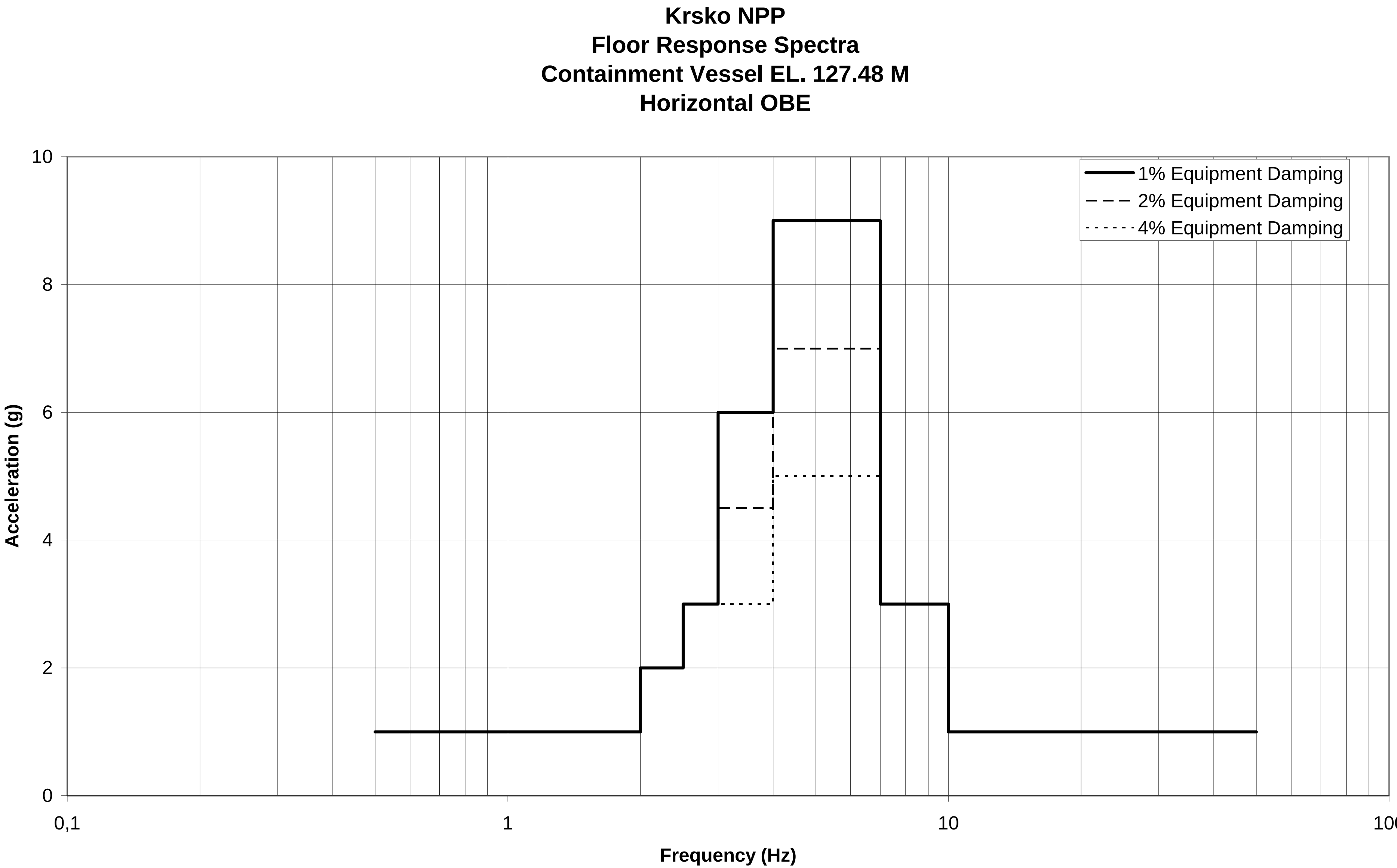

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 127.48 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
2
4
6
8
10
0,1
1
10
100
Frequency (Hz)

Figure A17

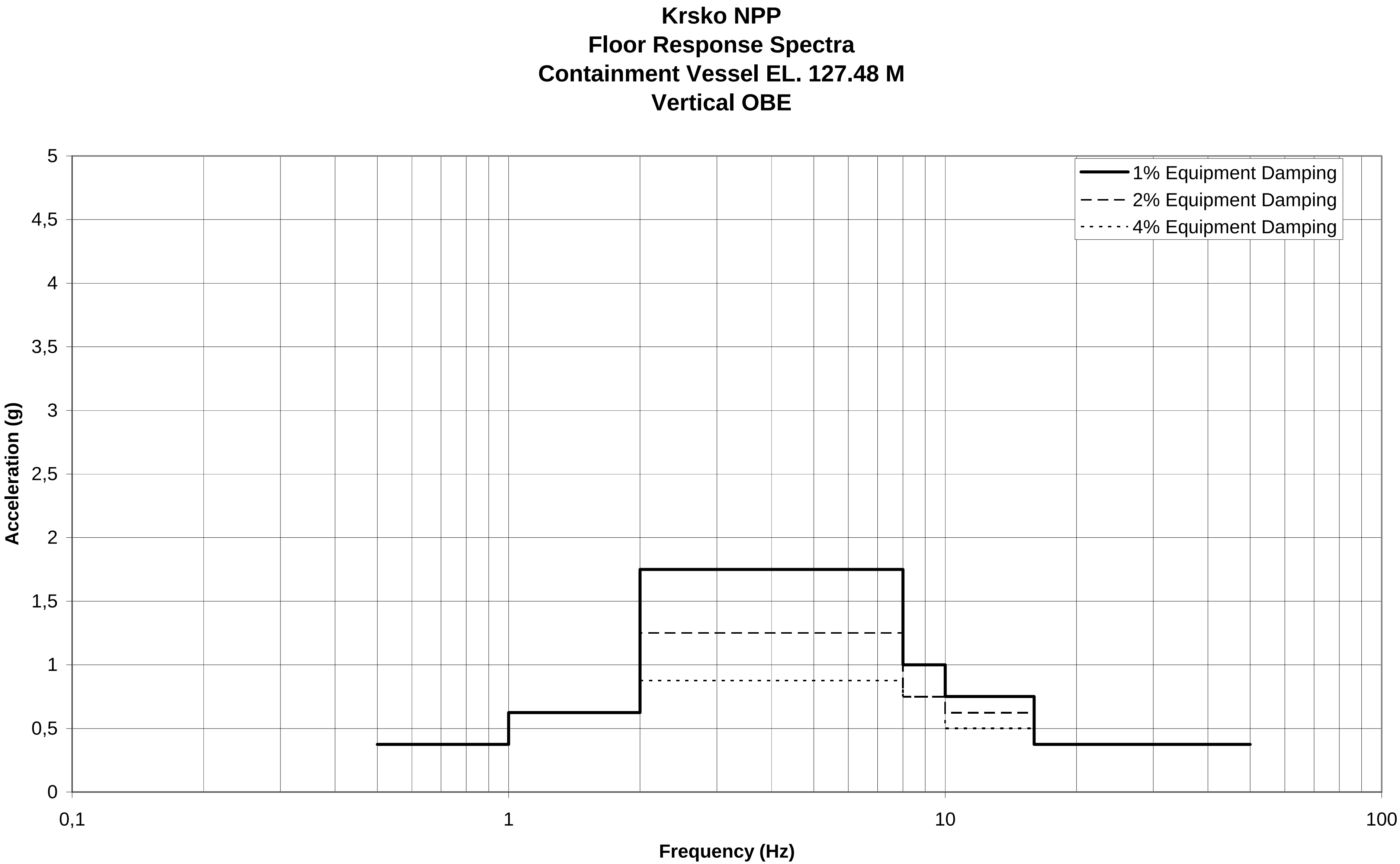
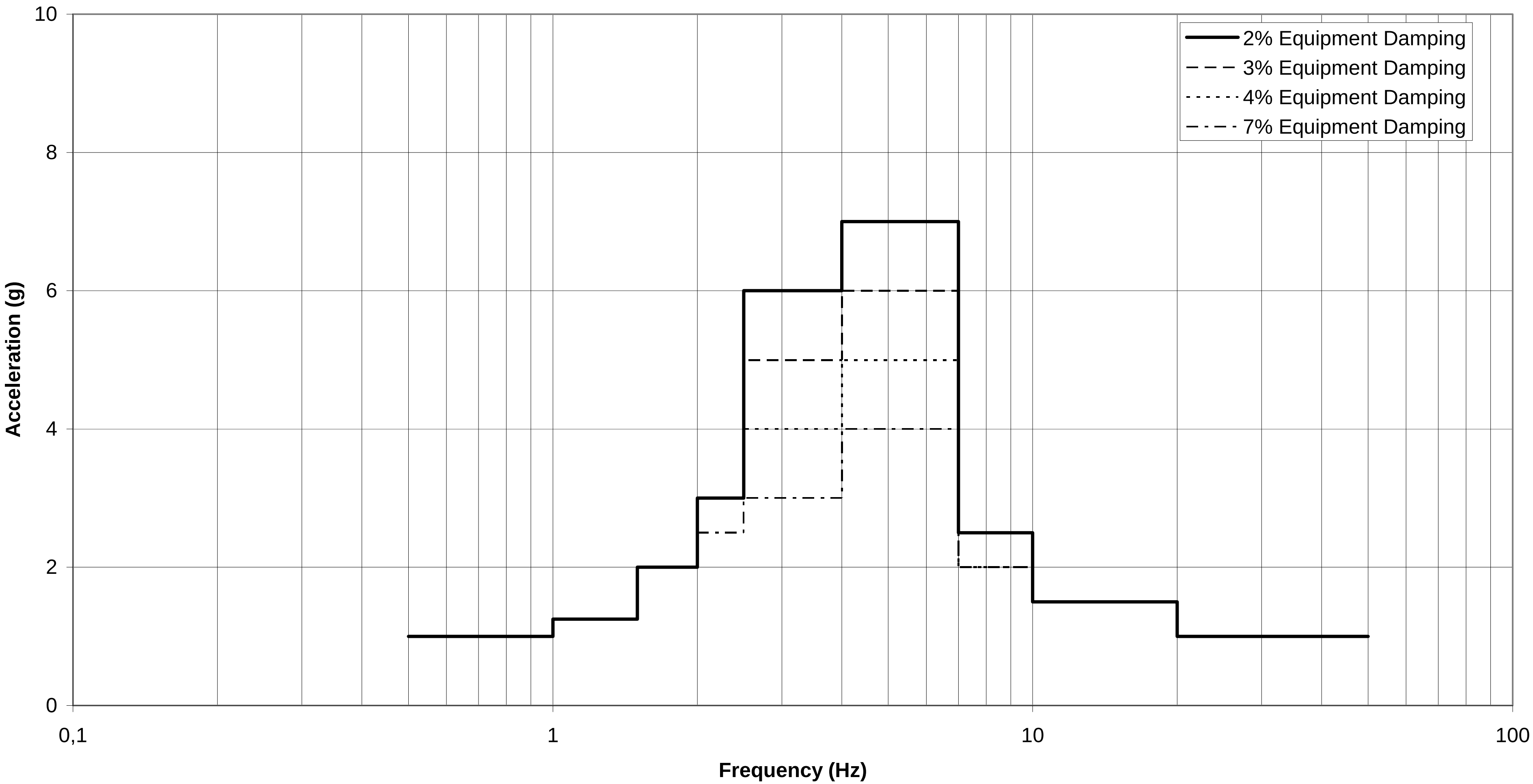

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 127.48 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A18

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 127.48 M
Horizontal SSE



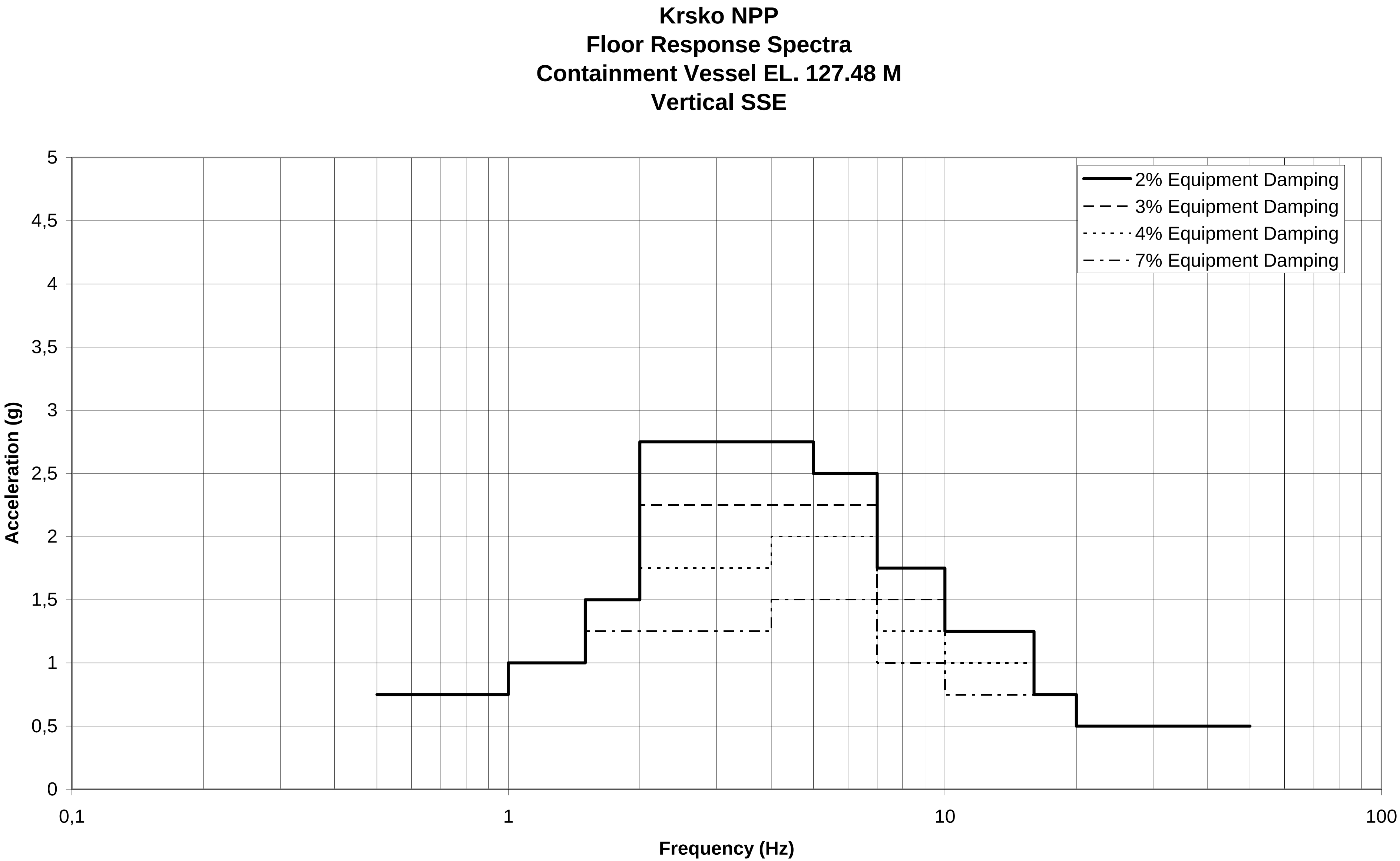
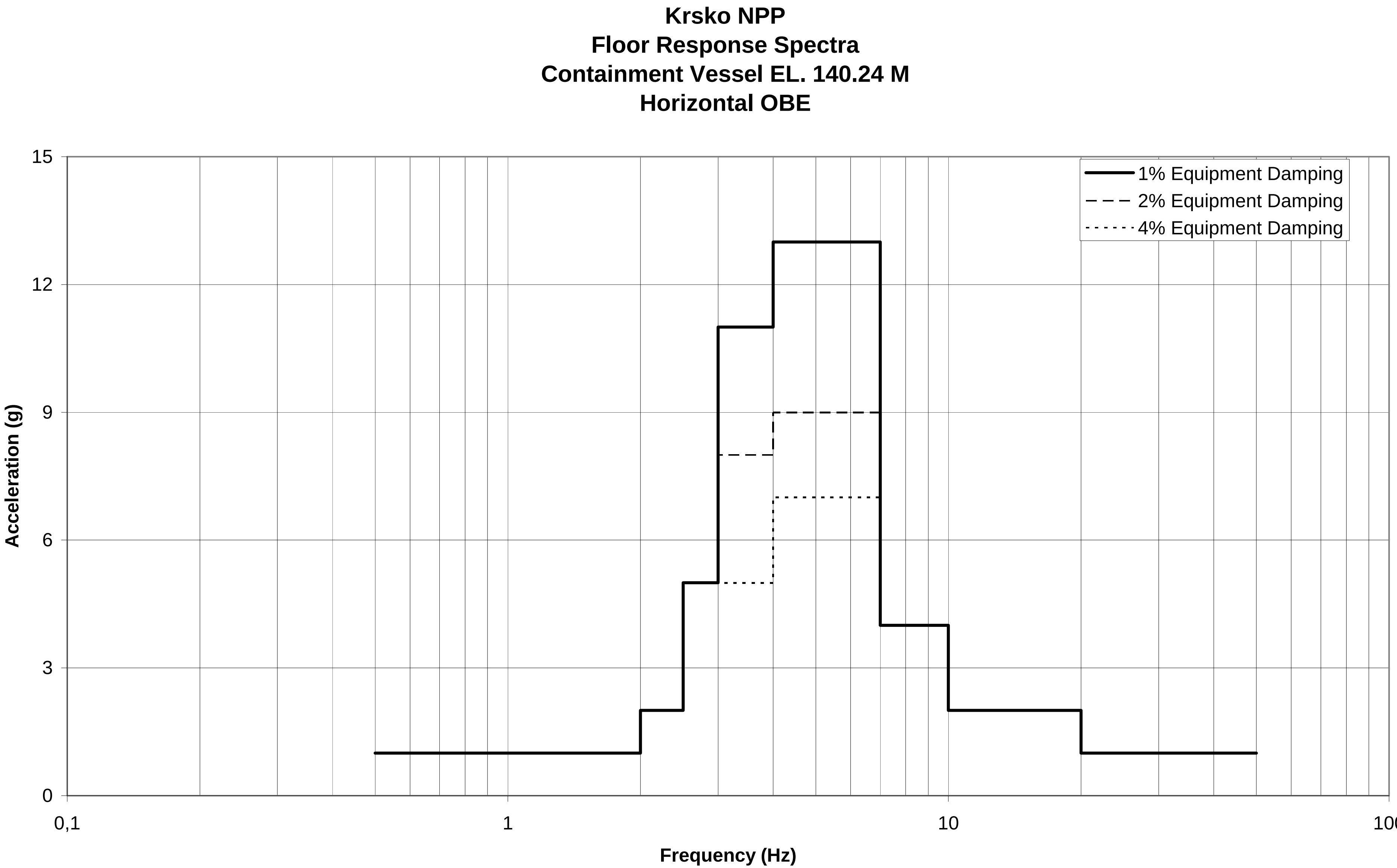

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 127.48 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A20


Krsko NPP
Floor Response Spectra
Containment Vessel EL. 140.24 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
3
6
9
12
15
0,1
1
10
100

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 140.24 M
Vertical OBE

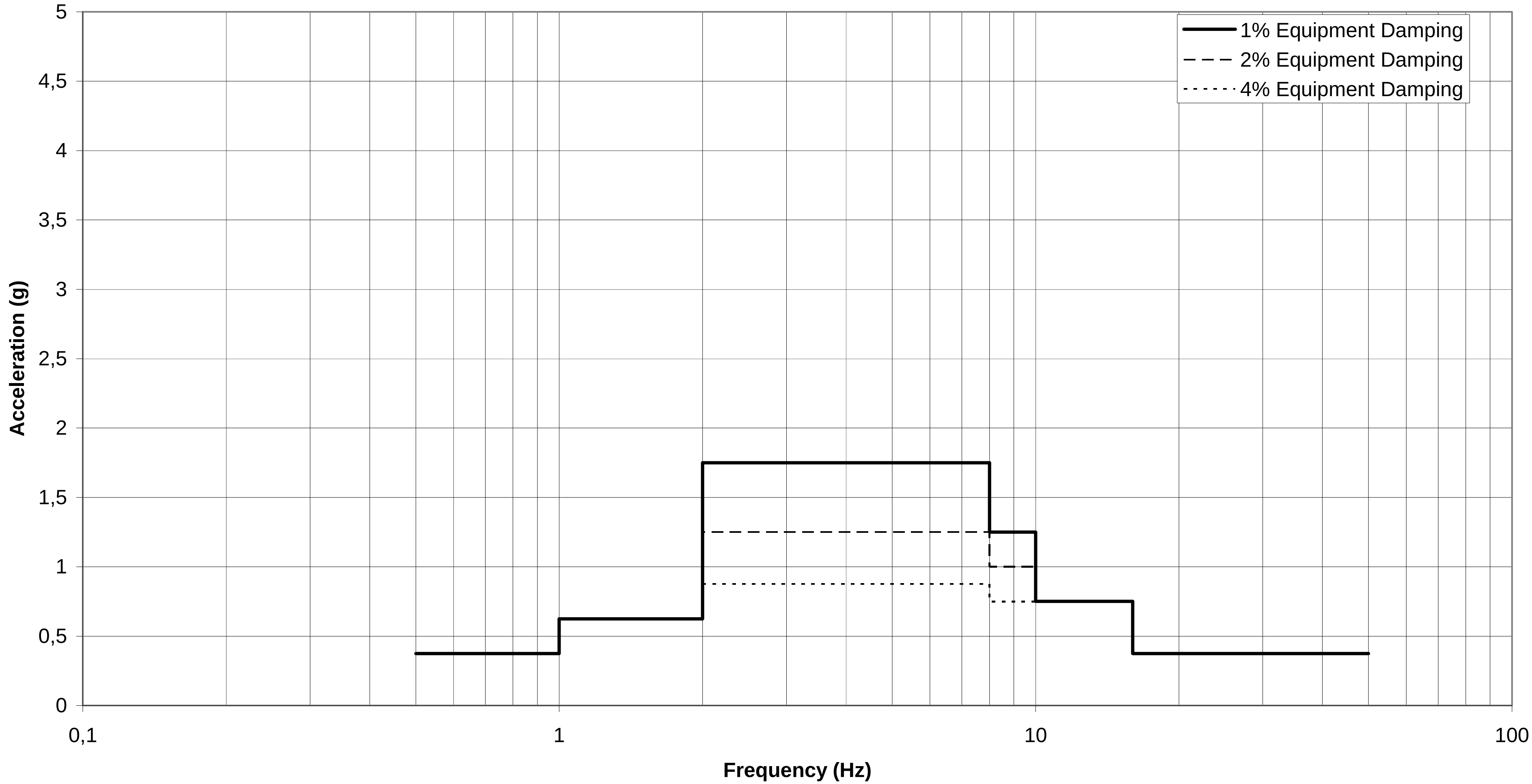


Figure A22

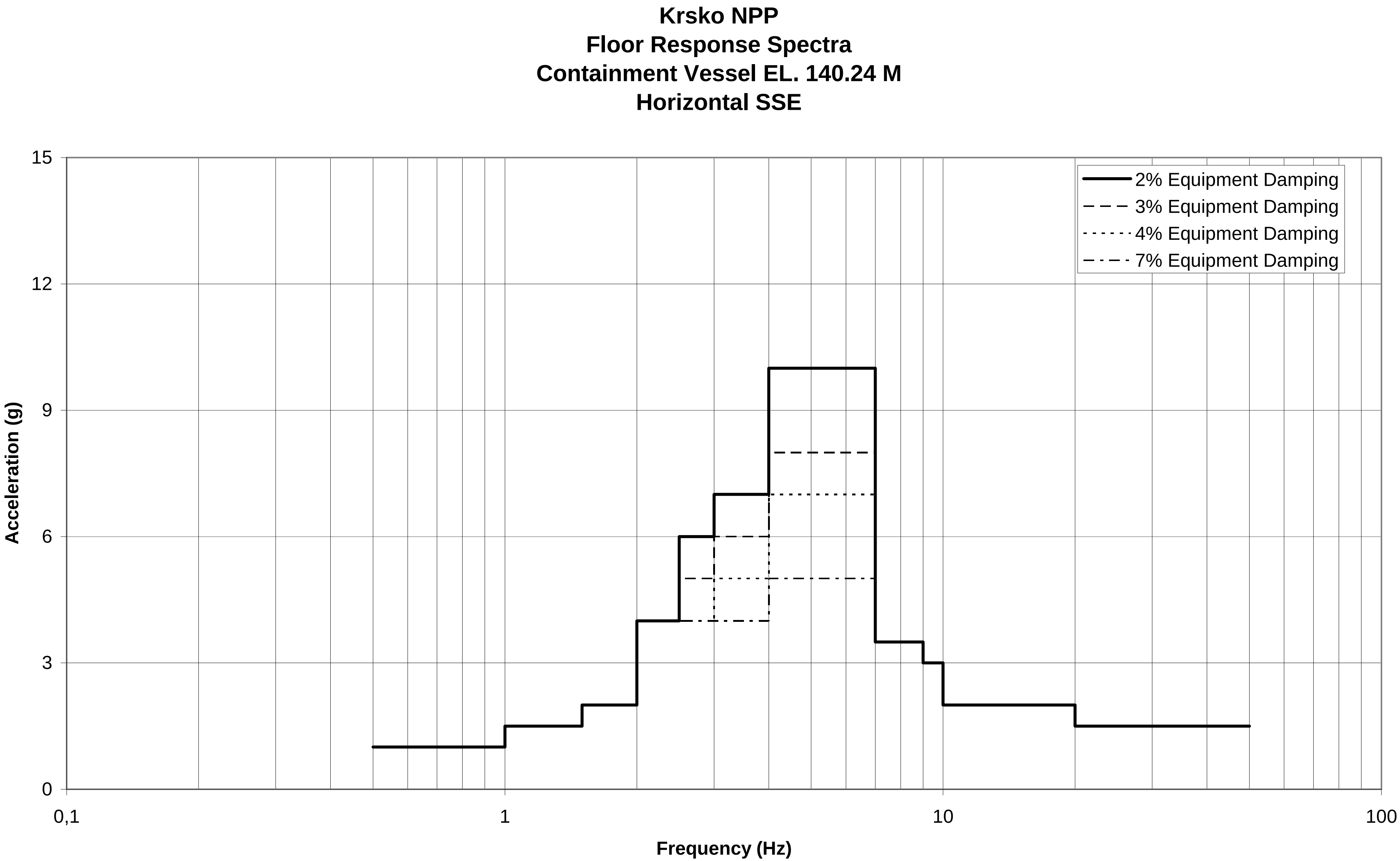

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 140.24 M
Horizontal SSE
15
12
9
6
3
0
Acceleration (g)
0,1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A23

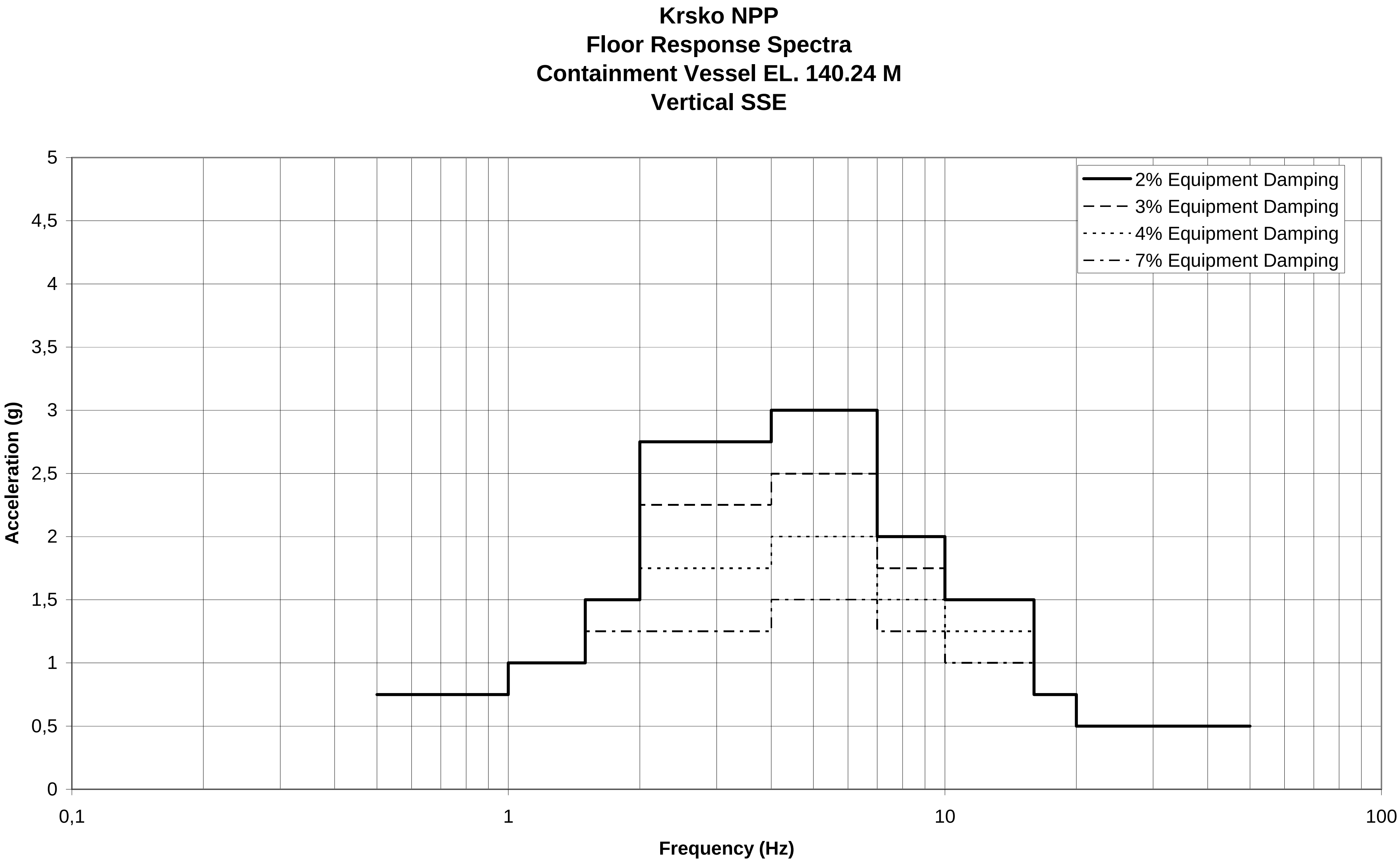
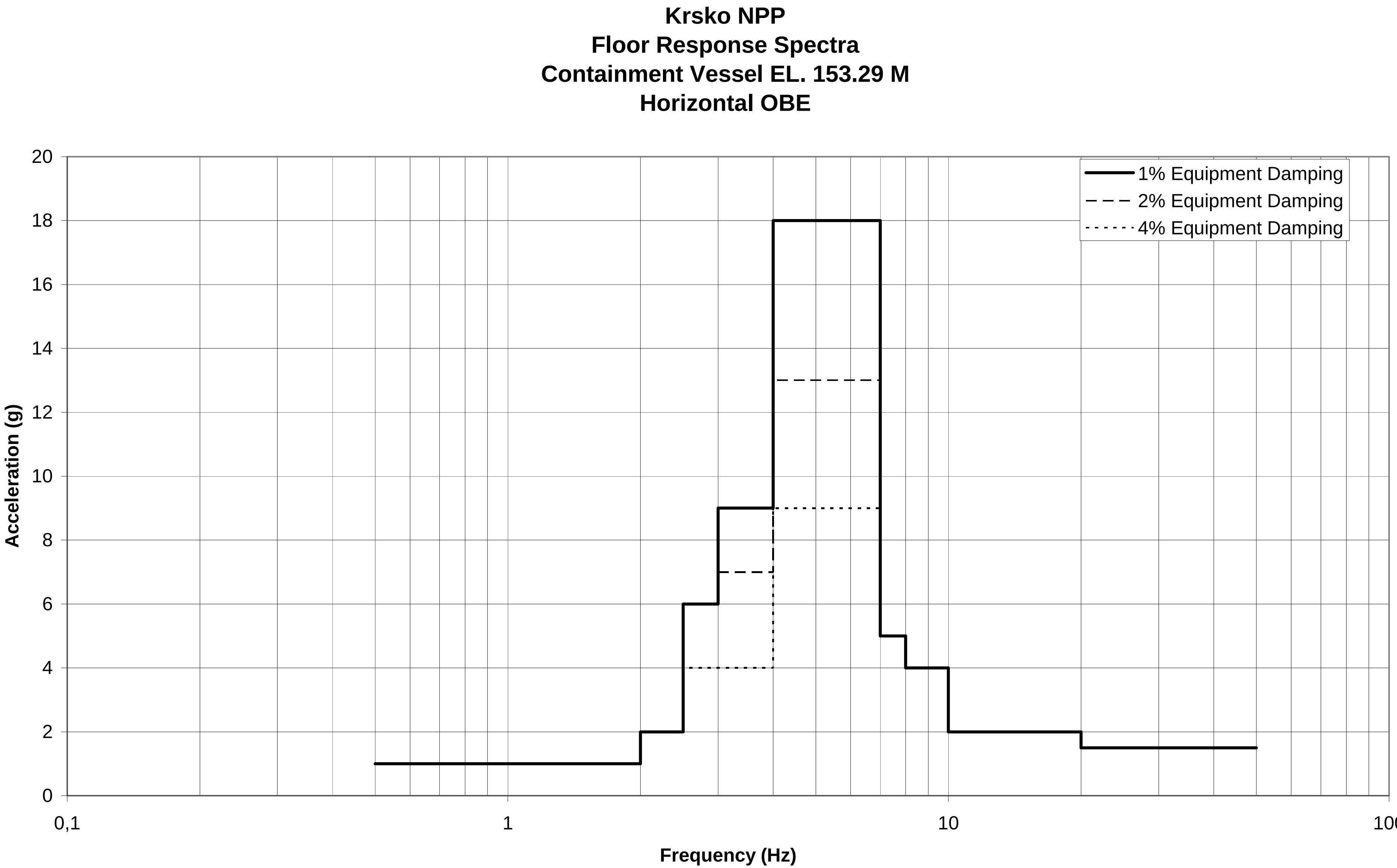

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 140.24 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A24


Krsko NPP
Floor Response Spectra
Containment Vessel EL. 153.29 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
2
4
6
8
10
12
14
16
18
20
0,1
1
10
100

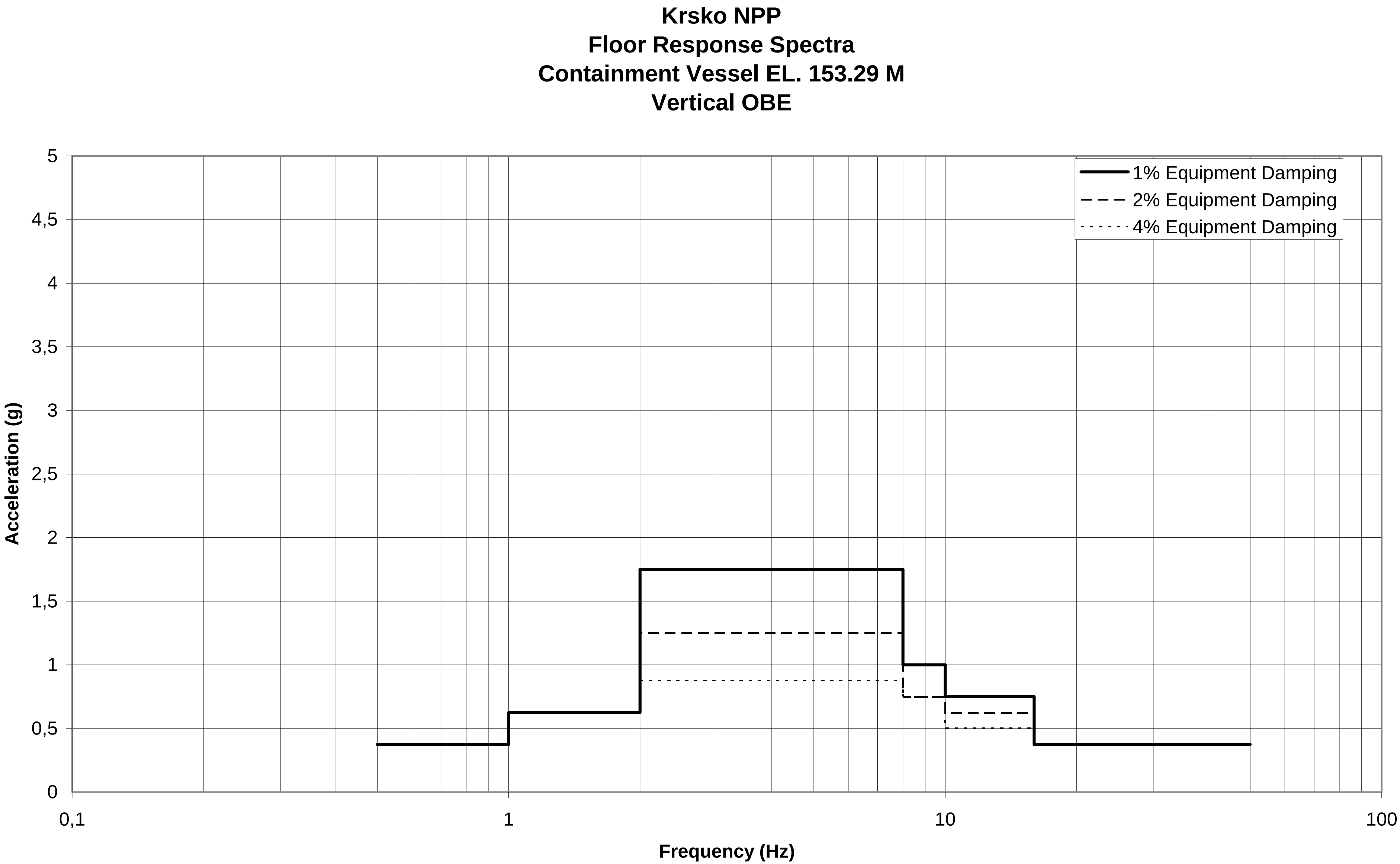
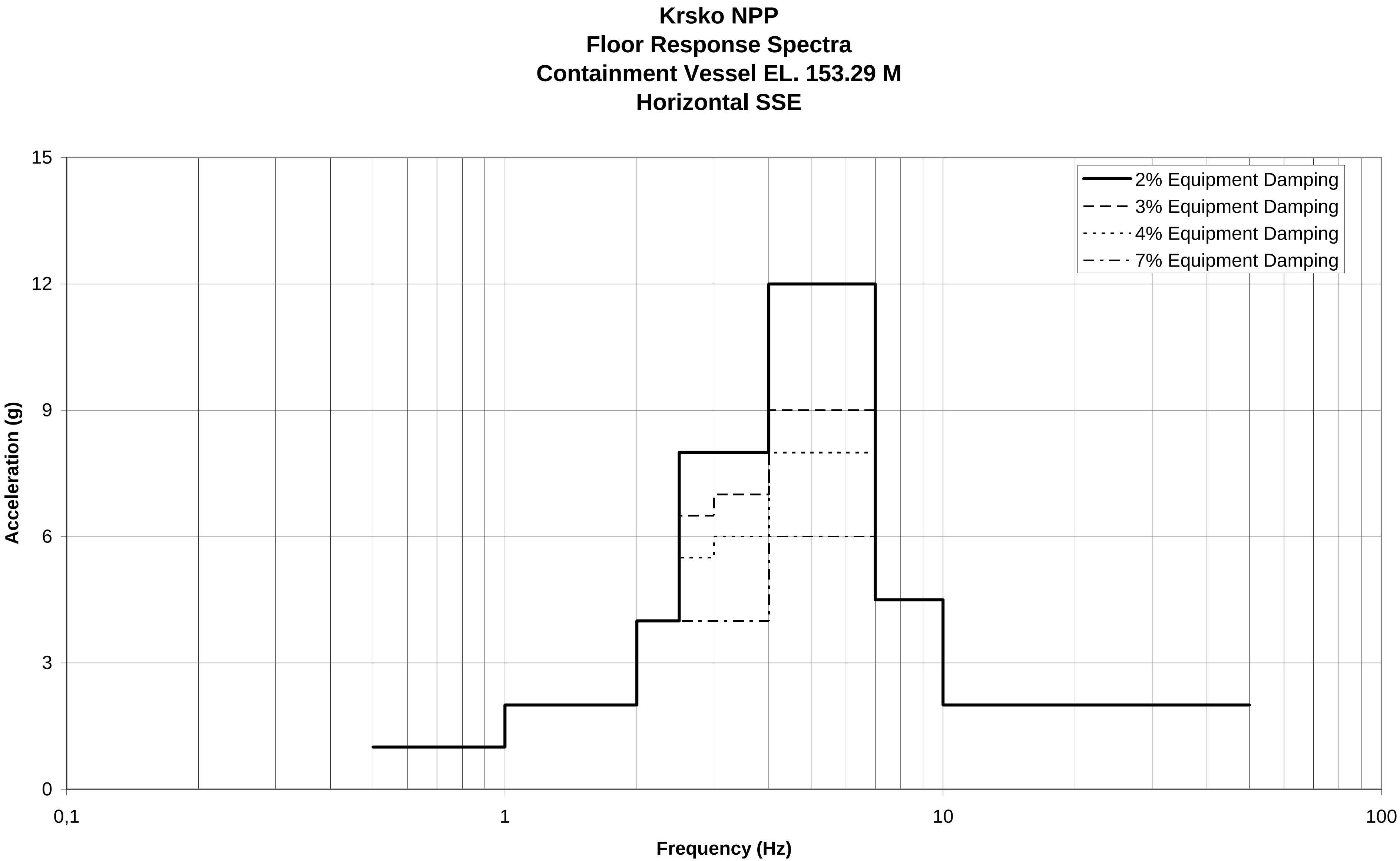
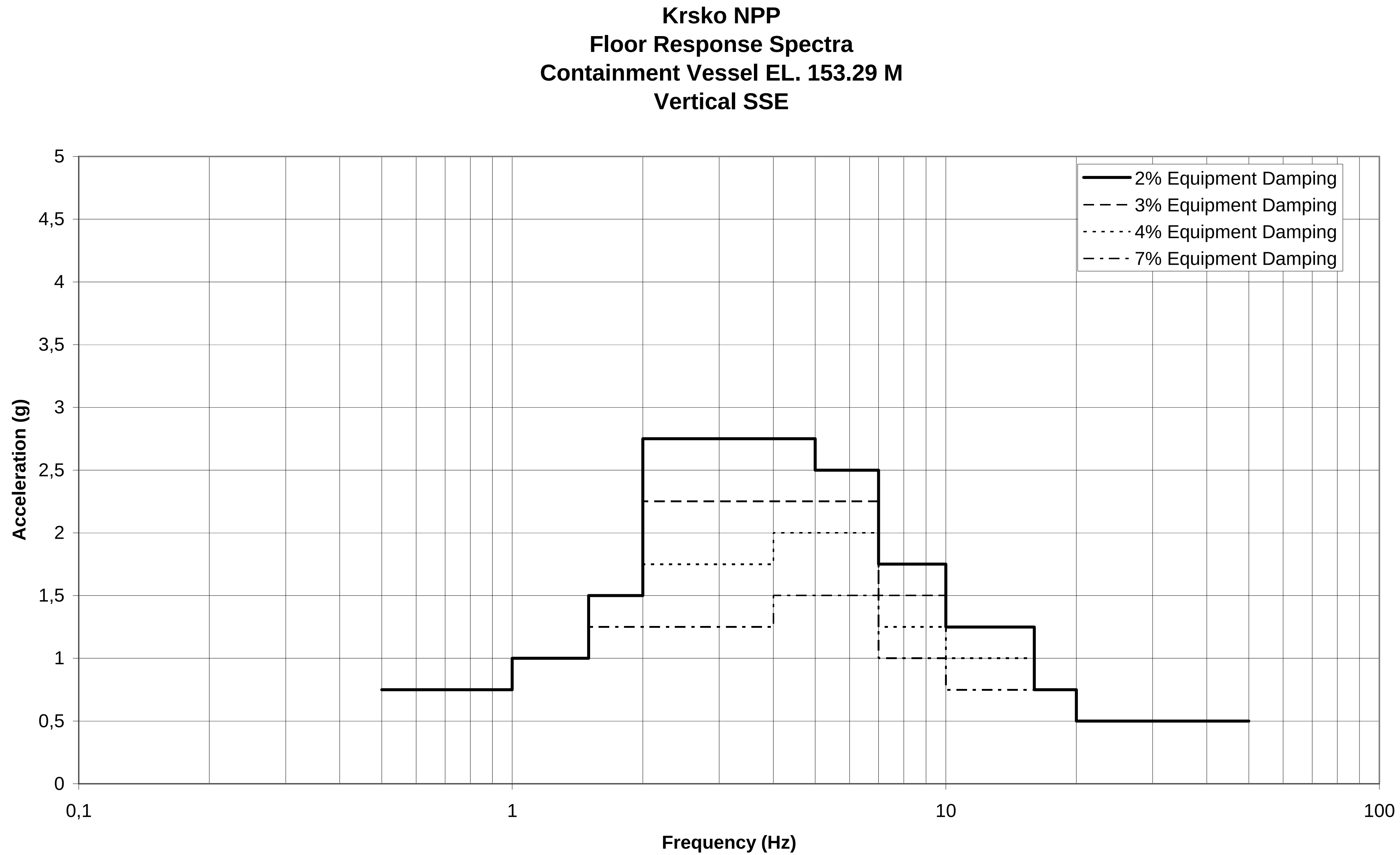

Krsko NPP
Floor Response Spectra
Containment Vessel EL. 153.29 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A26


Krsko NPP
Floor Response Spectra
Containment Vessel EL. 153.29 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
3
6
9
12
15
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Containment Vessel EL. 153.29 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

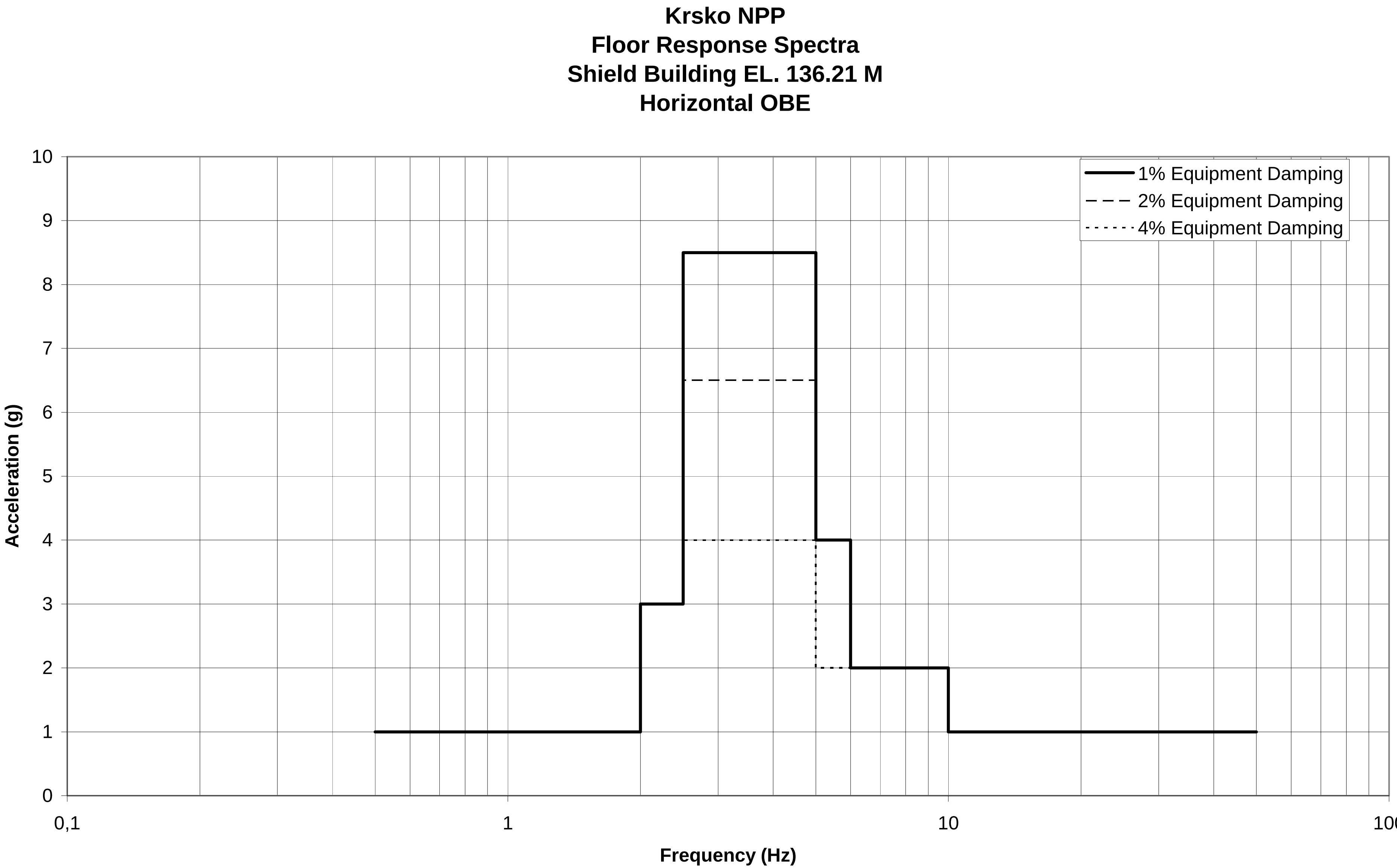

Krsko NPP
Floor Response Spectra
Shield Building EL. 136.21 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
10
9
8
7
6
5
4
3
2
1
0
0,1
1
10
100
Frequency (Hz)

Figure A29

Krsko NPP
Floor Response Spectra
Shield Building EL. 136.21 M
Vertical OBE

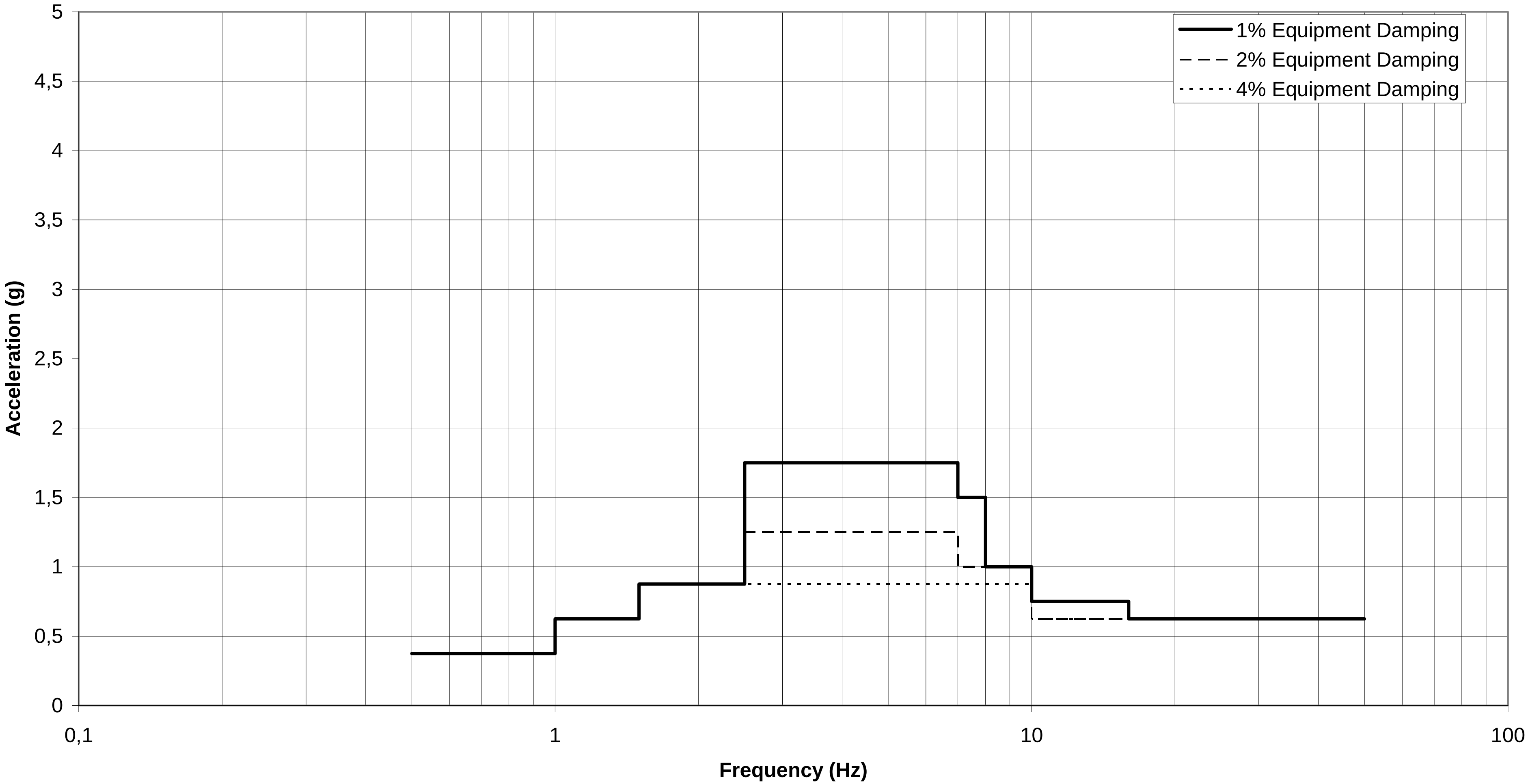
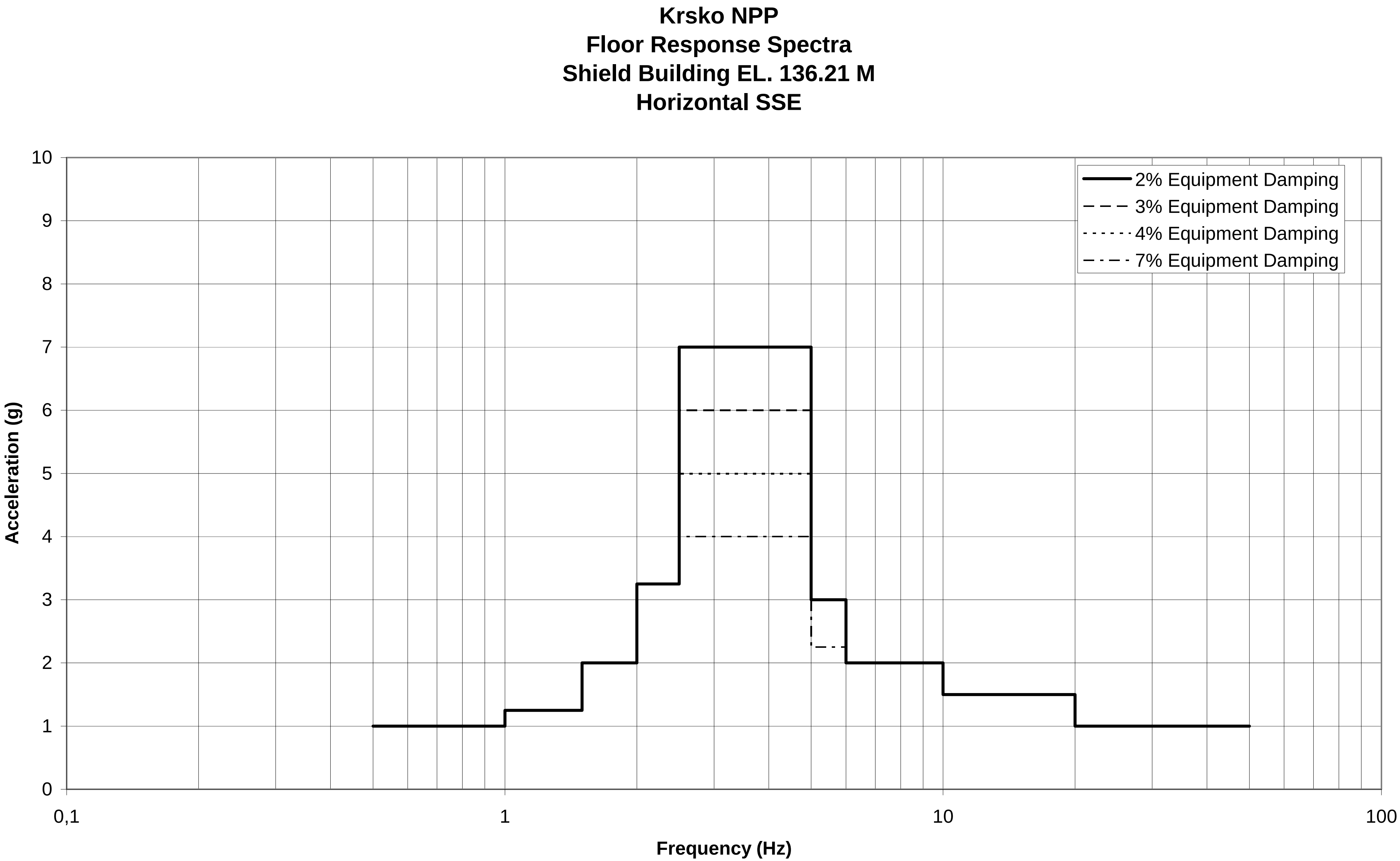


Figure A30


Krsko NPP
Floor Response Spectra
Shield Building EL. 136.21 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
10
9
8
7
6
5
4
3
2
1
0
0,1
1
10
100
Frequency (Hz)

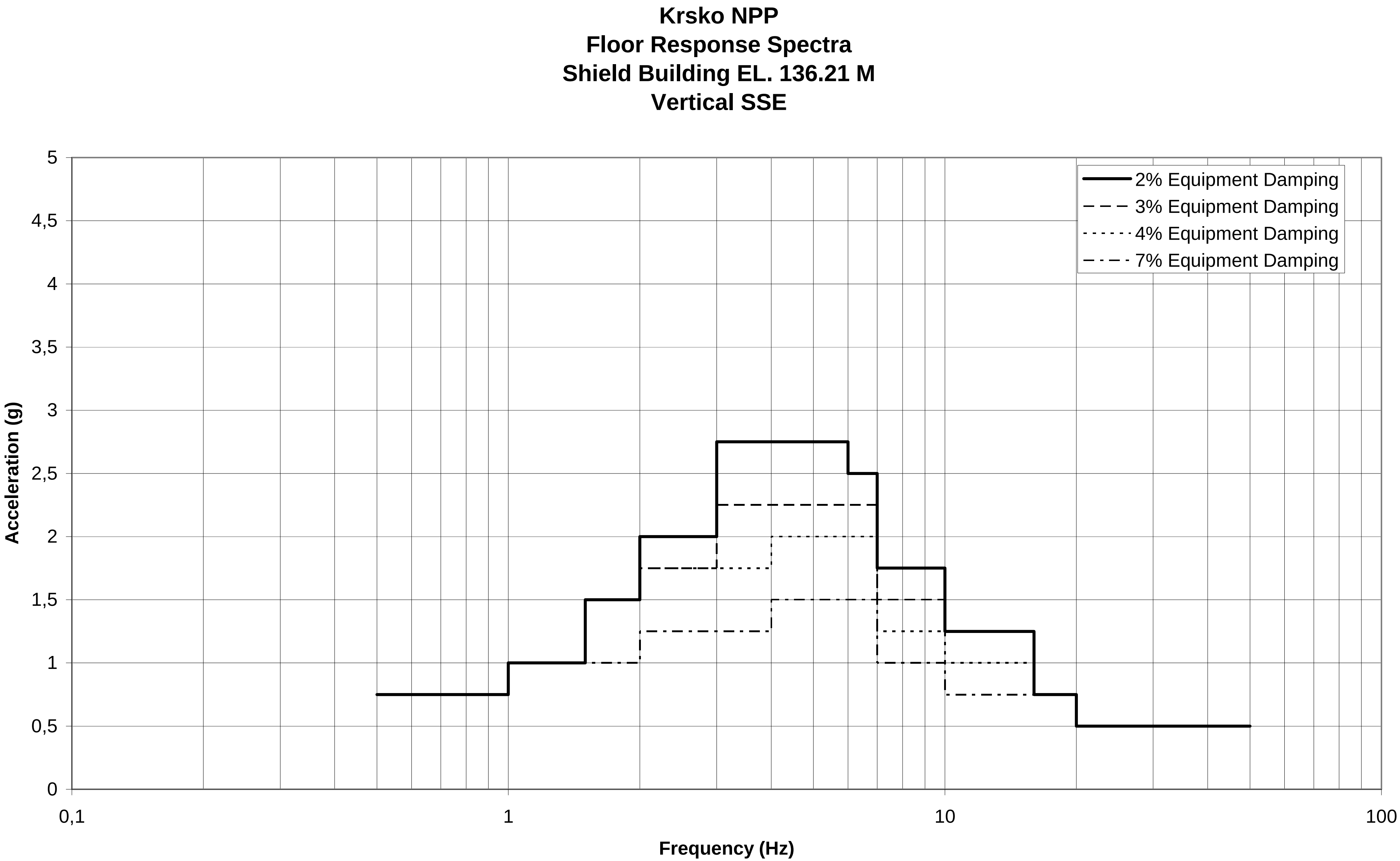

Krsko NPP
Floor Response Spectra
Shield Building EL. 136.21 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A32

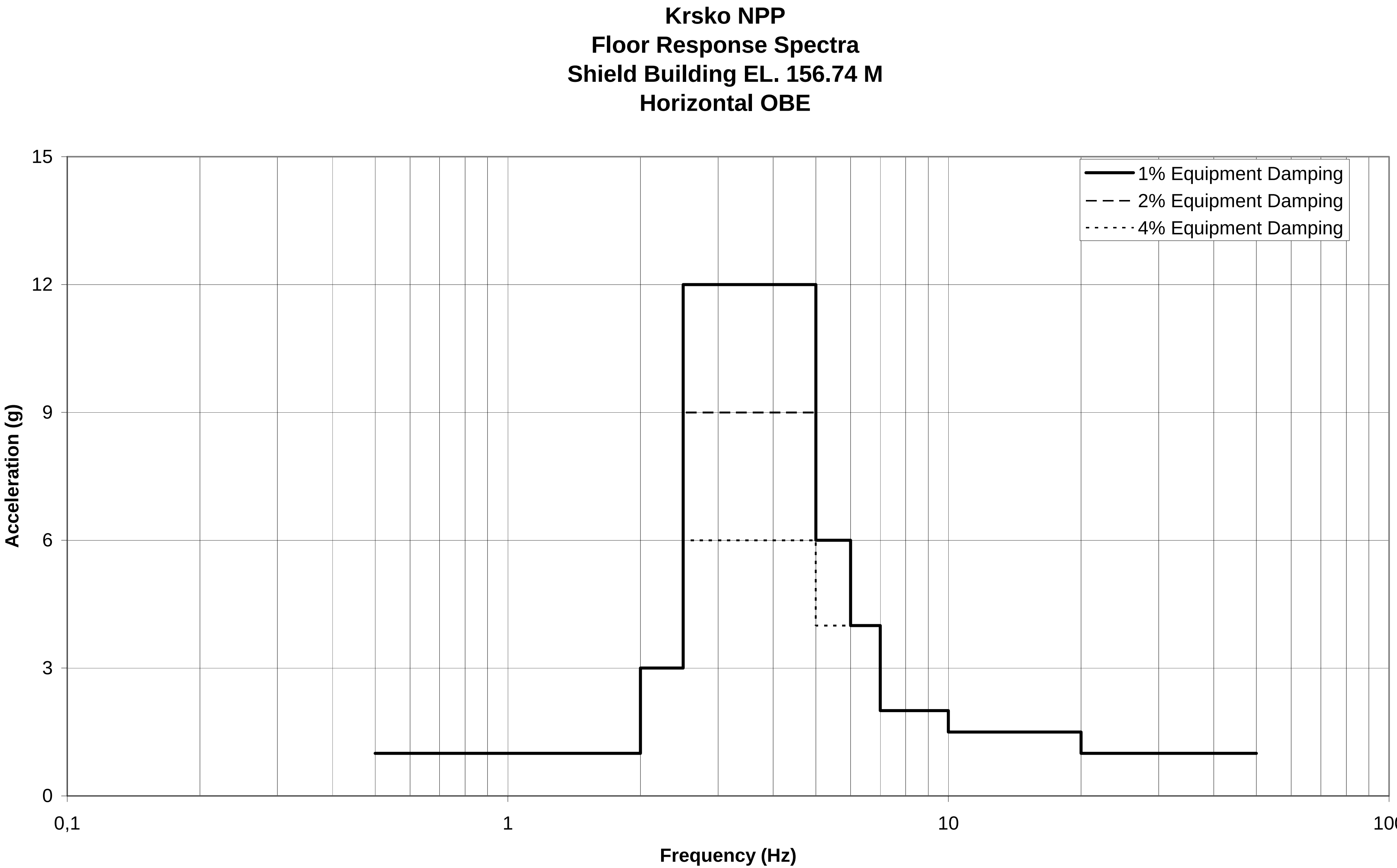

Krsko NPP
Floor Response Spectra
Shield Building EL. 156.74 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
15
12
9
6
3
0
0,1
1
10
100
Frequency (Hz)

Figure A33

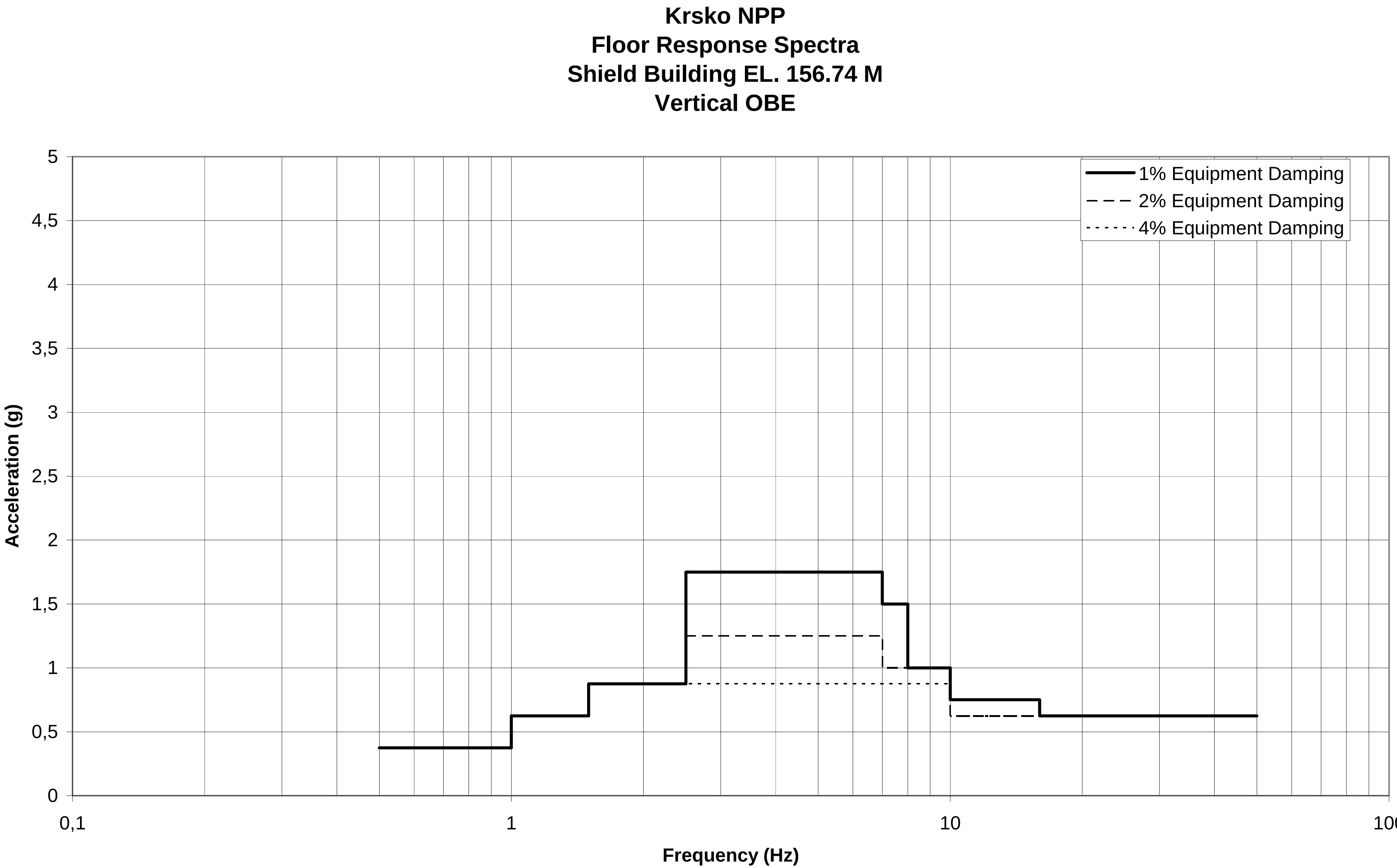
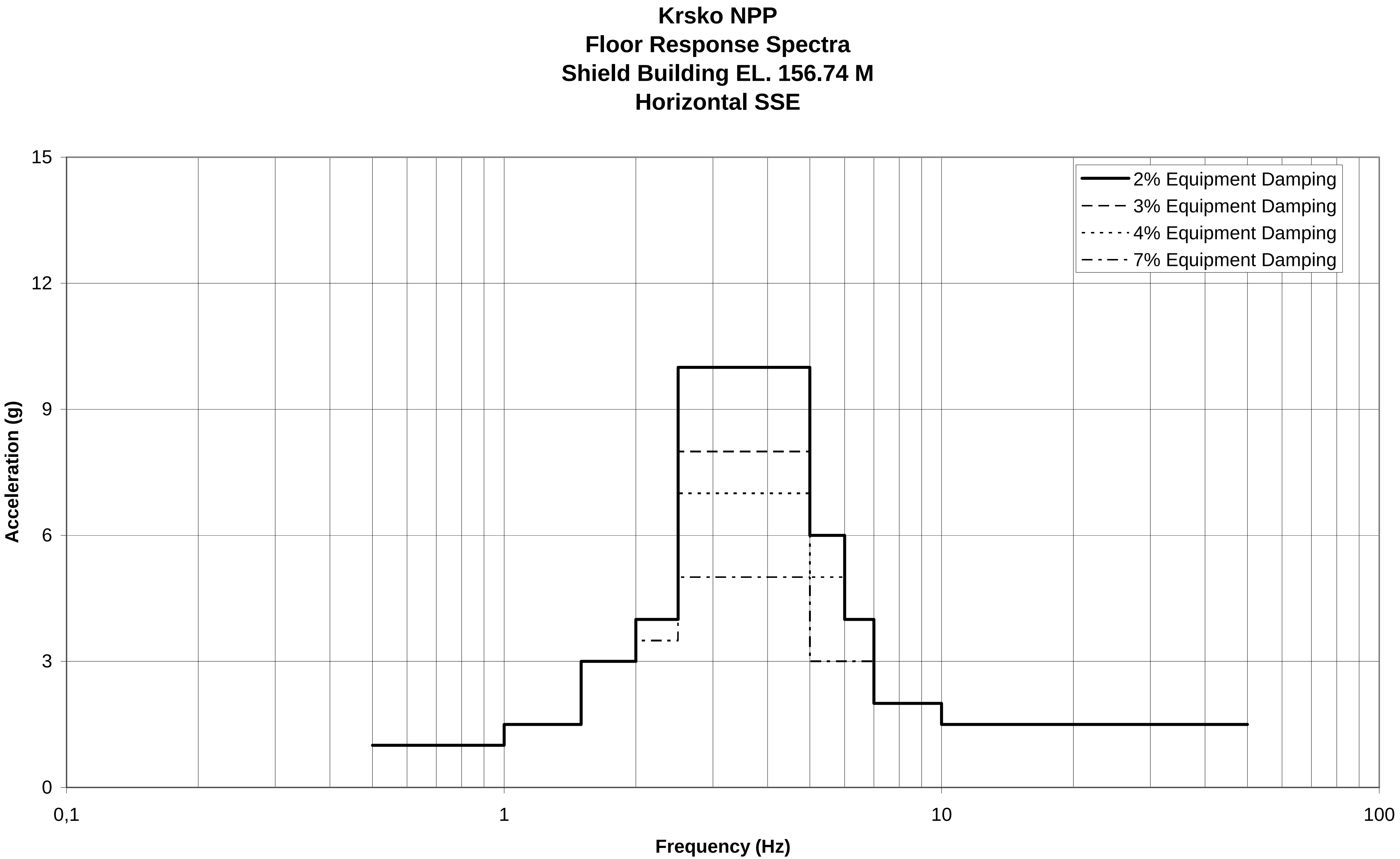
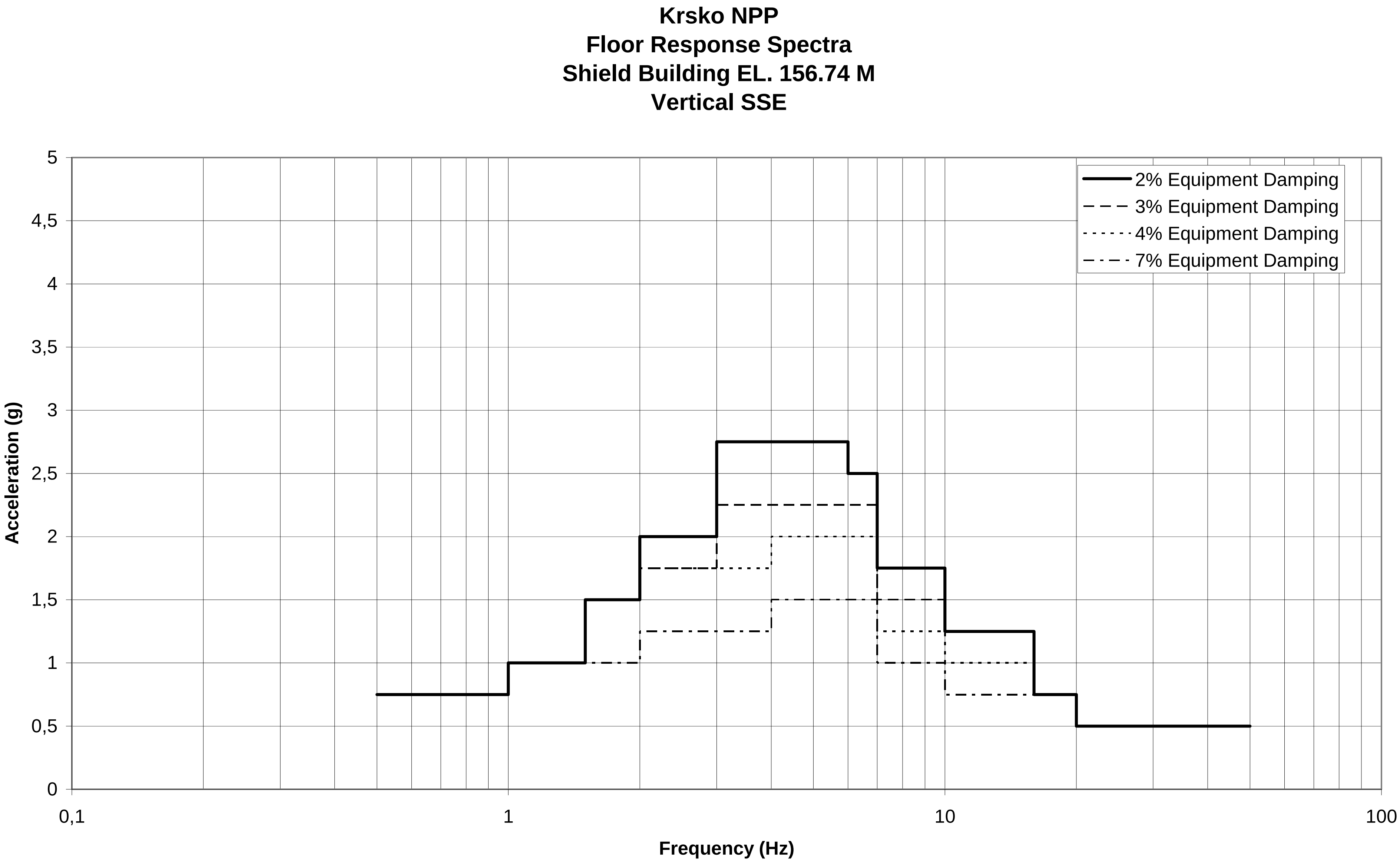
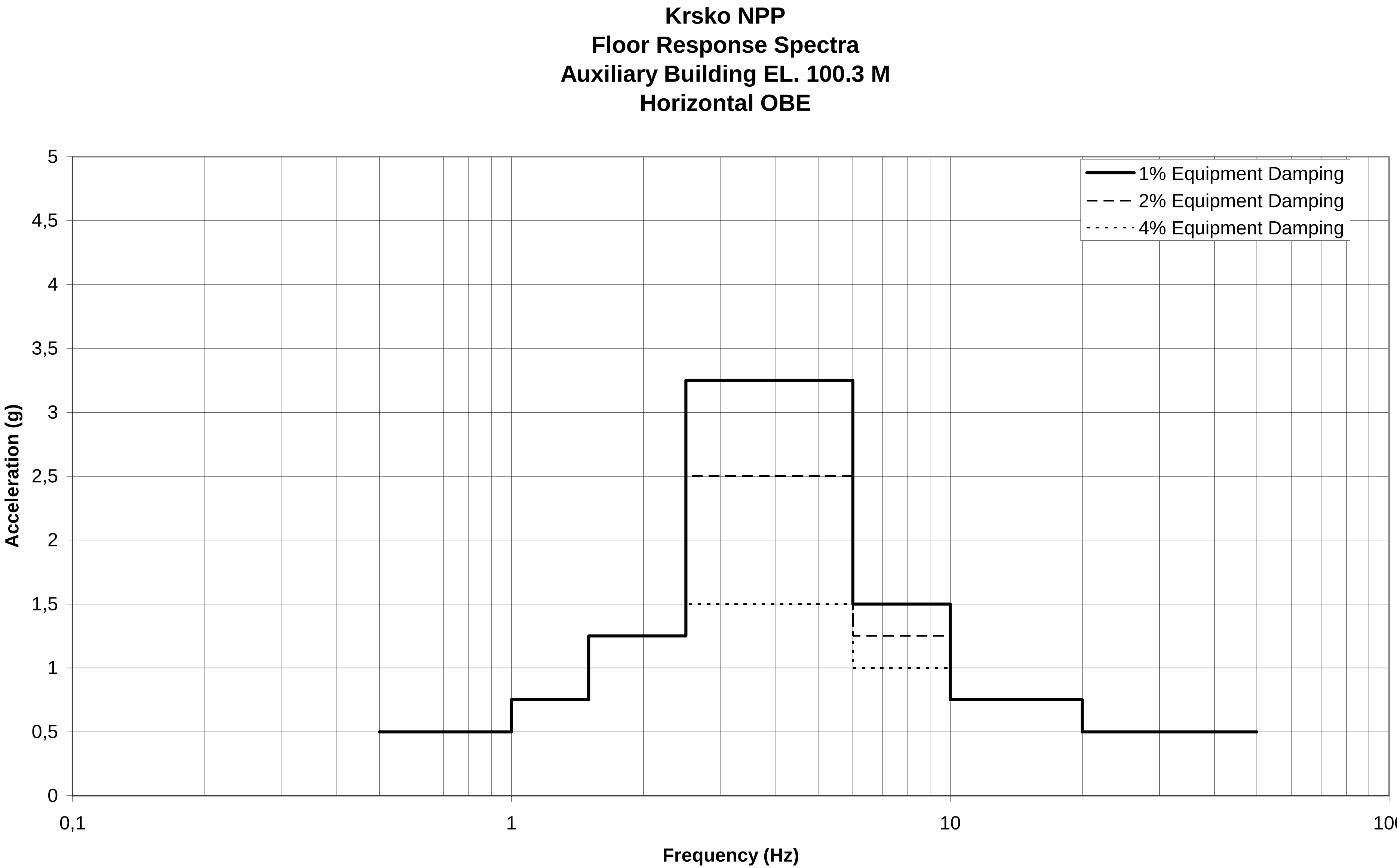

Krsko NPP
Floor Response Spectra
Shield Building EL. 156.74 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

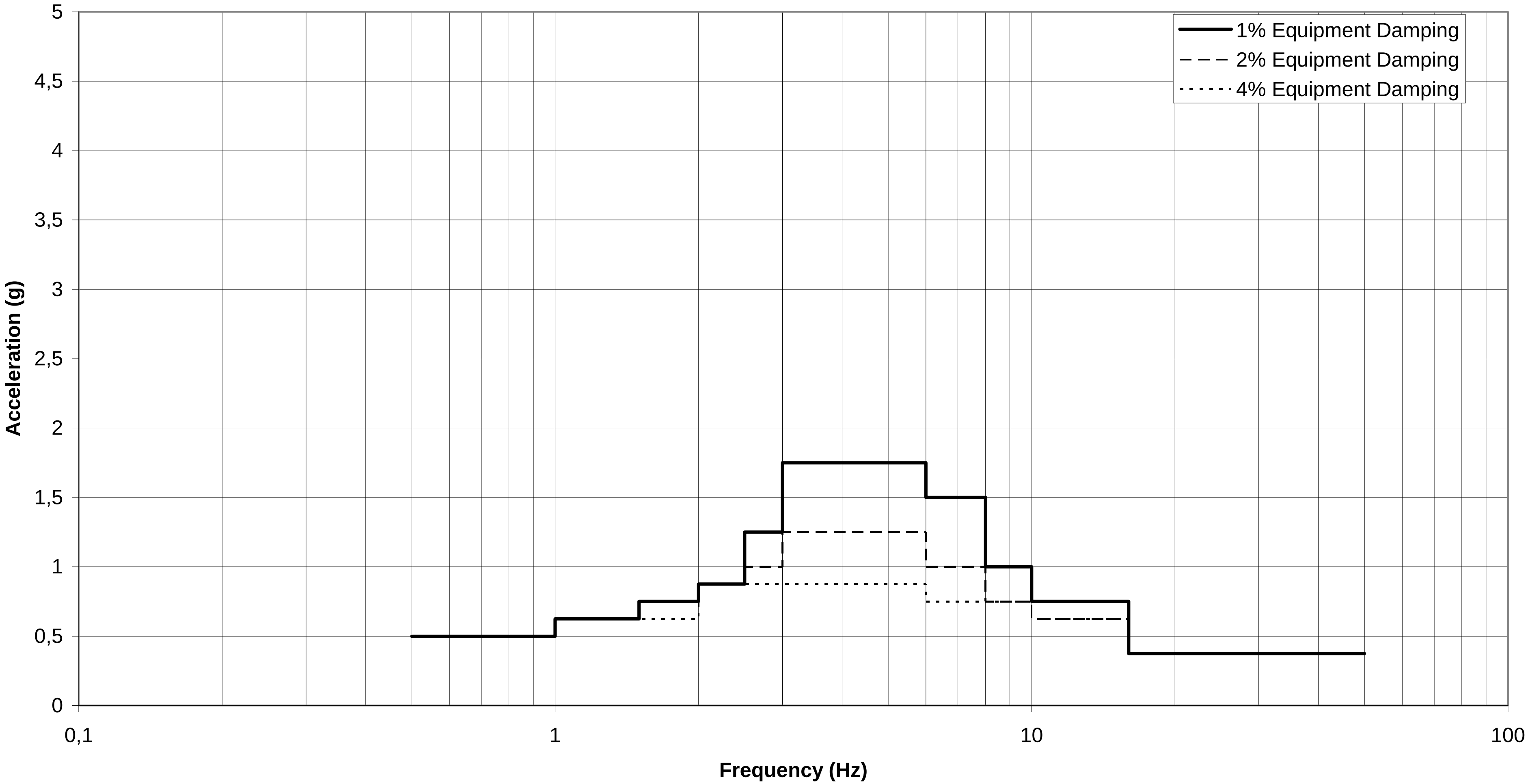
Figure A34

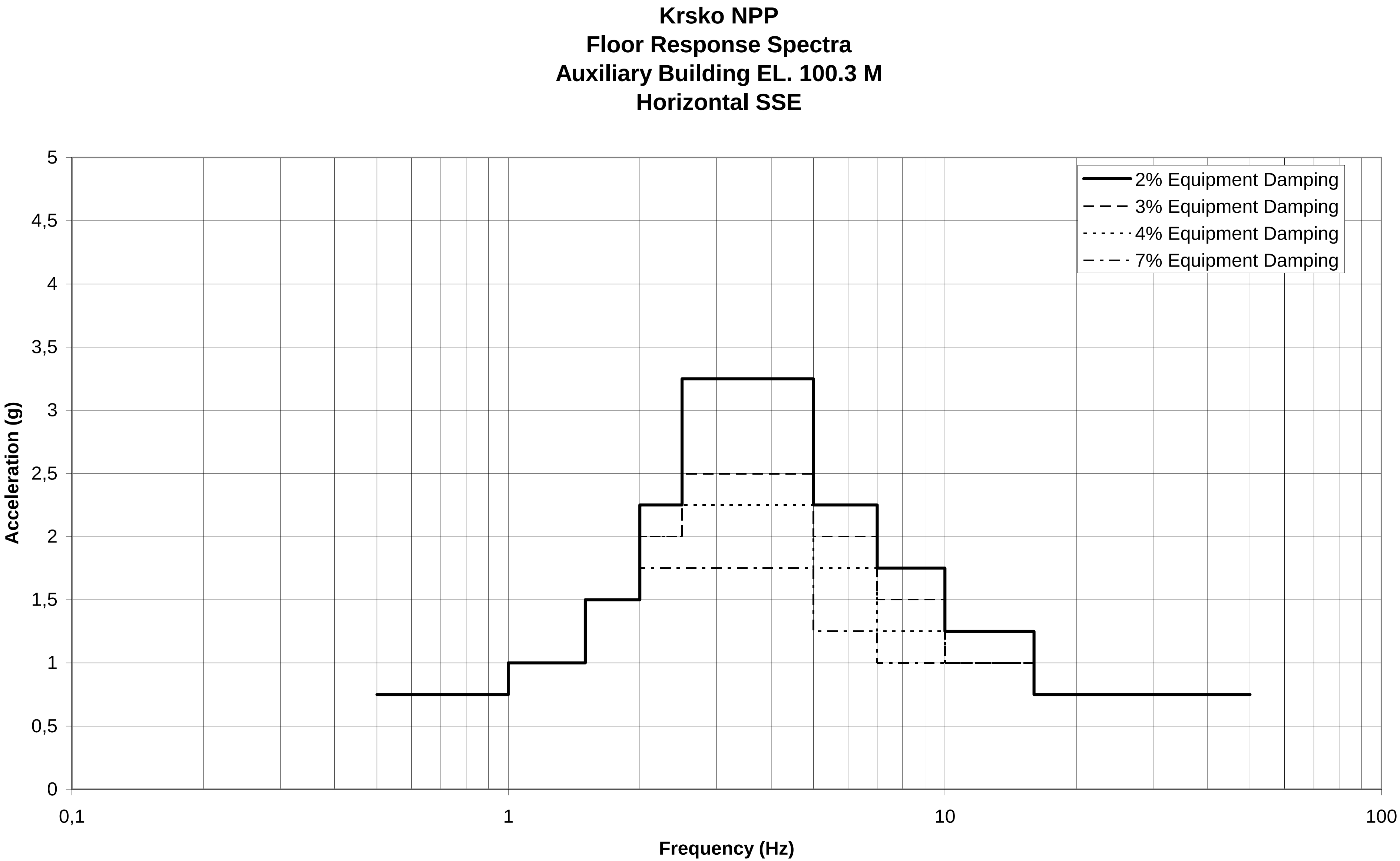

Krsko NPP
Floor Response Spectra
Shield Building EL. 156.74 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
3
6
9
12
15
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Shield Building EL. 156.74 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 100.3 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 100.3 M
Vertical OBE





Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A39

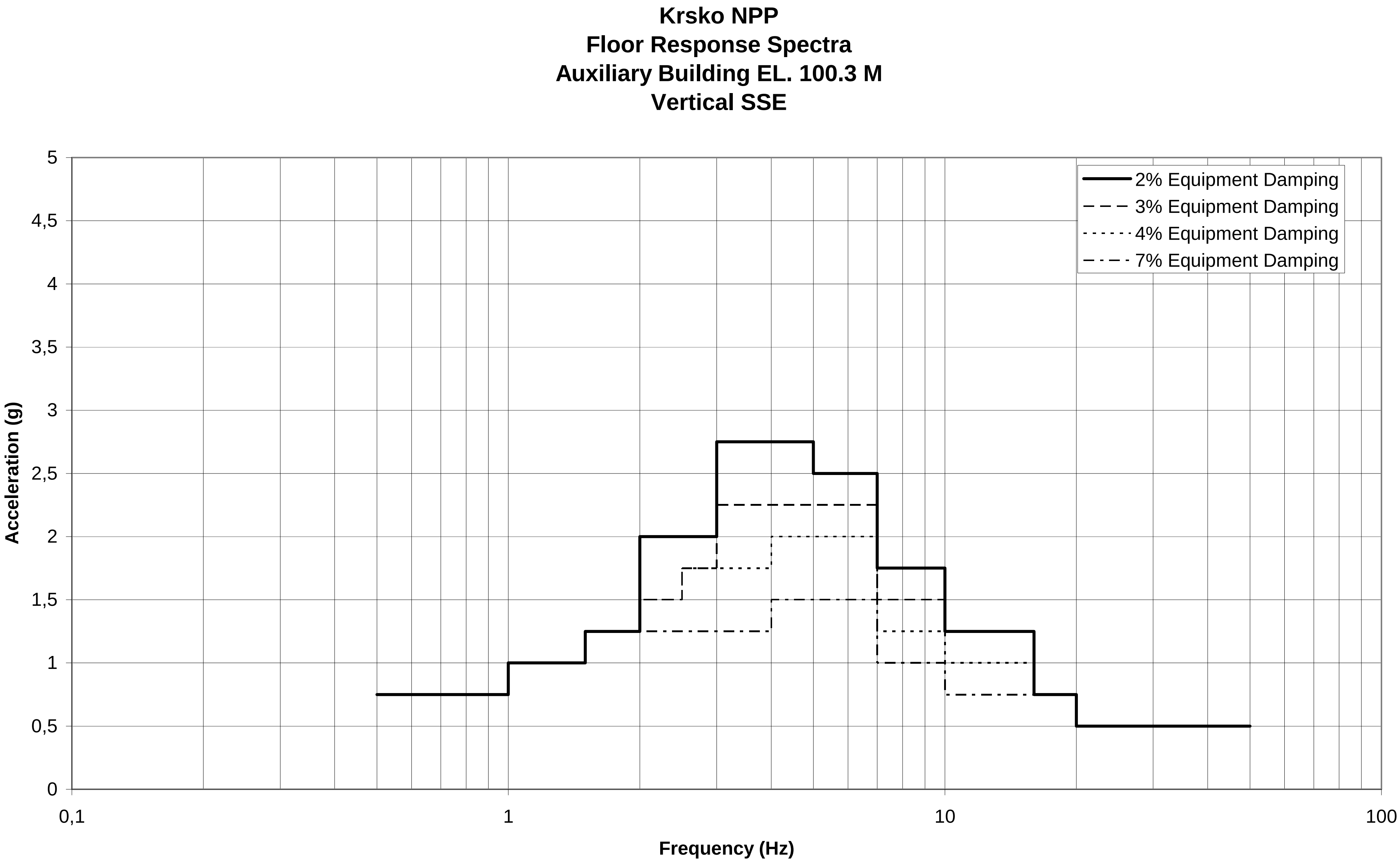

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 100.3 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A40

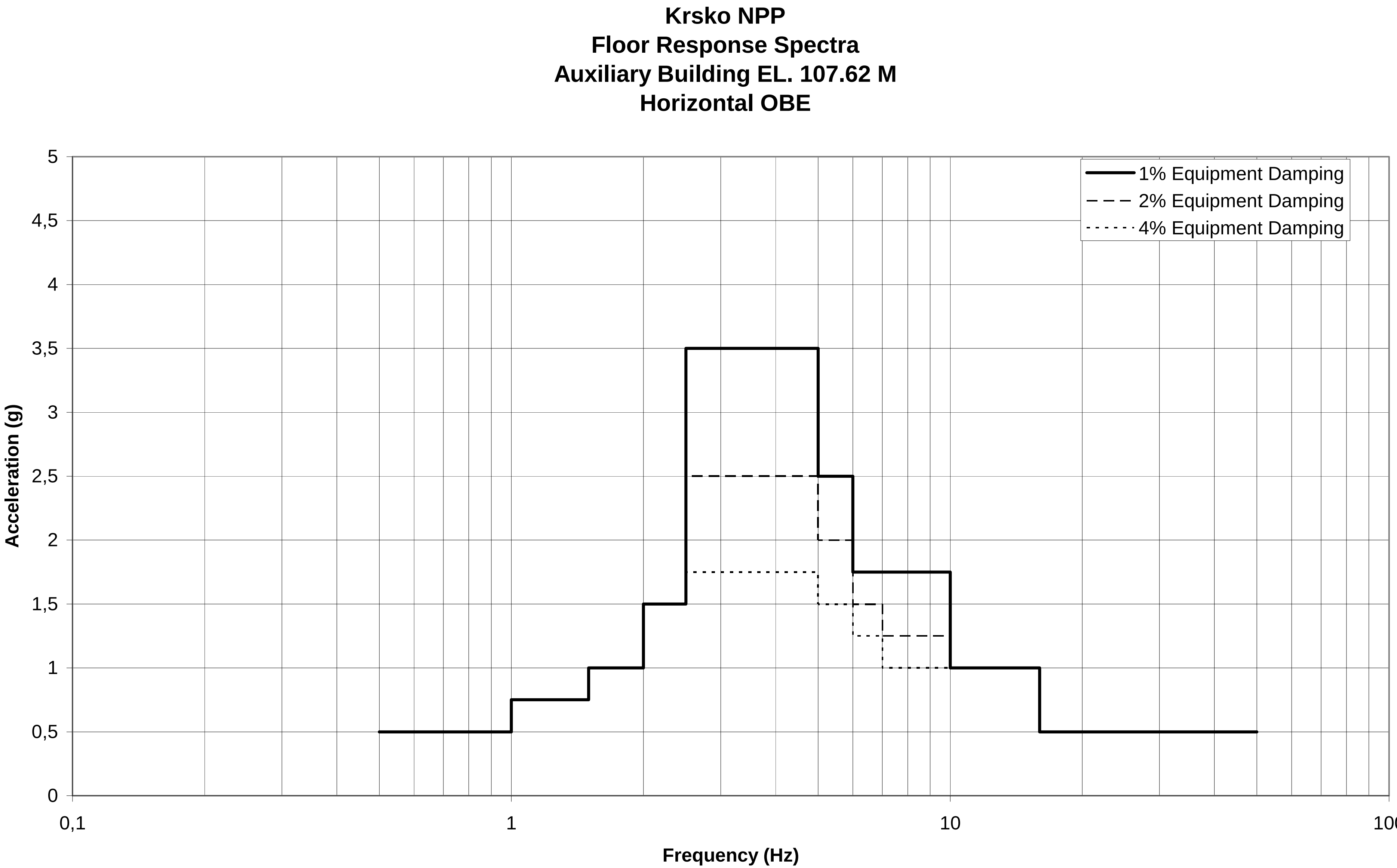
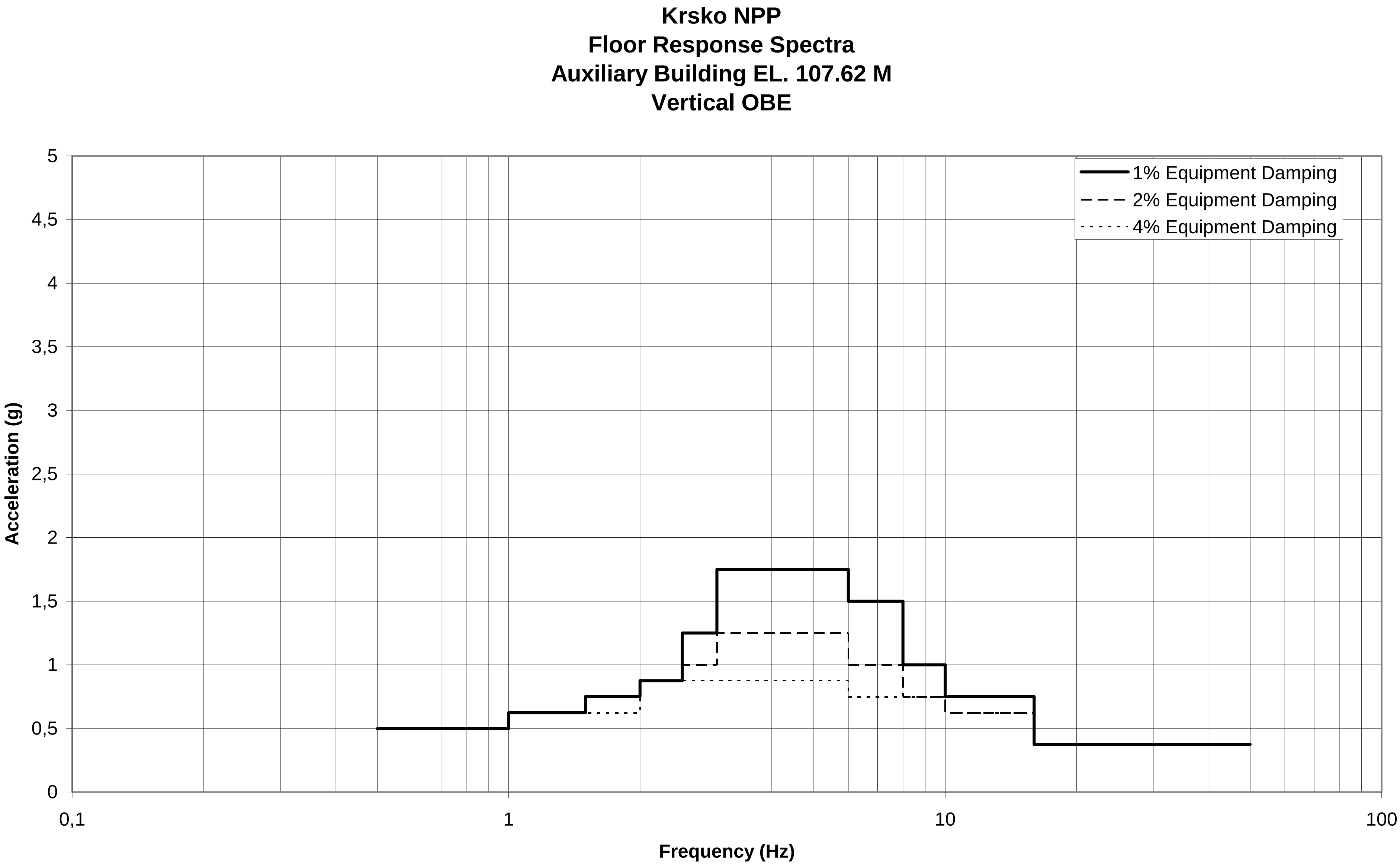
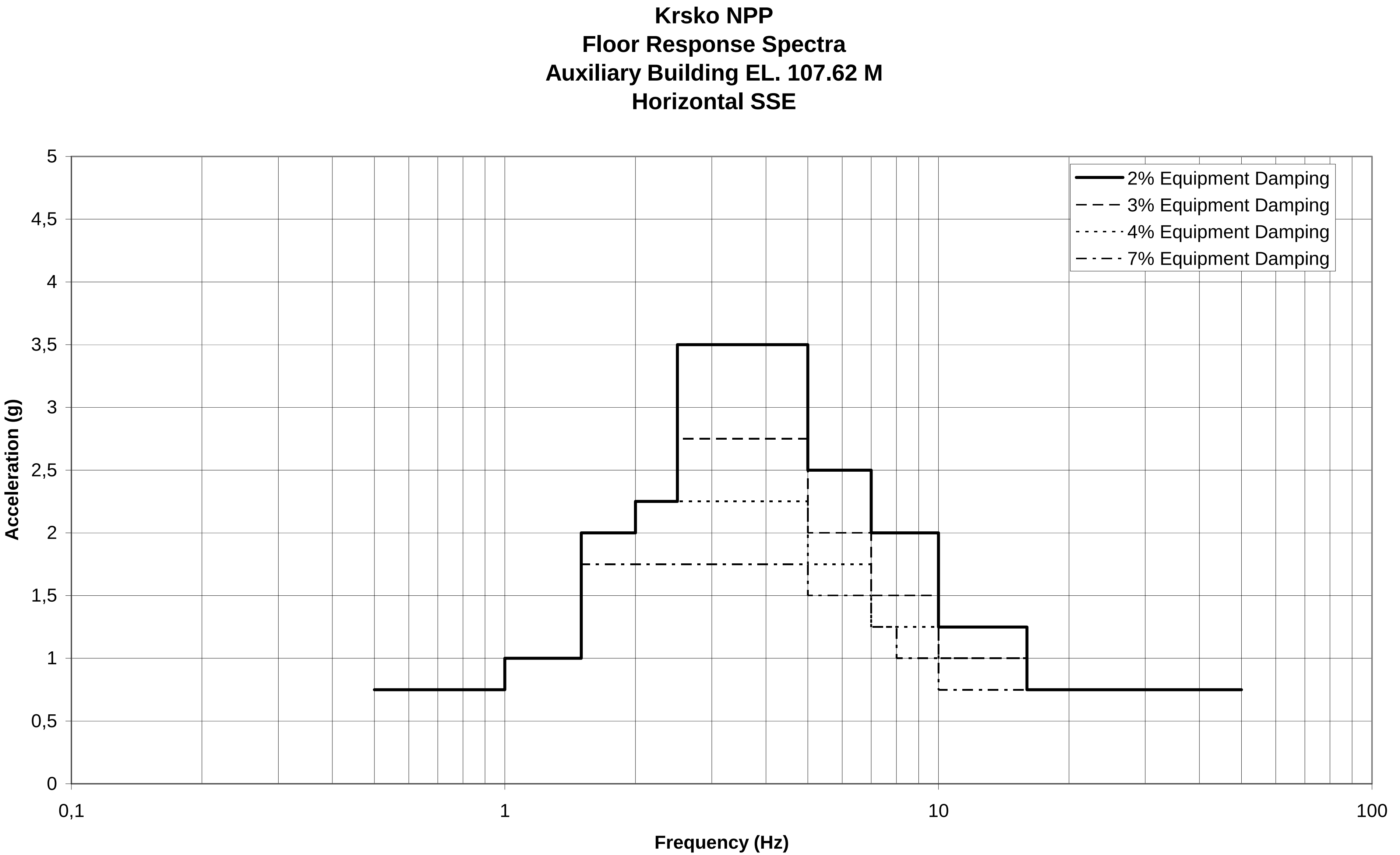
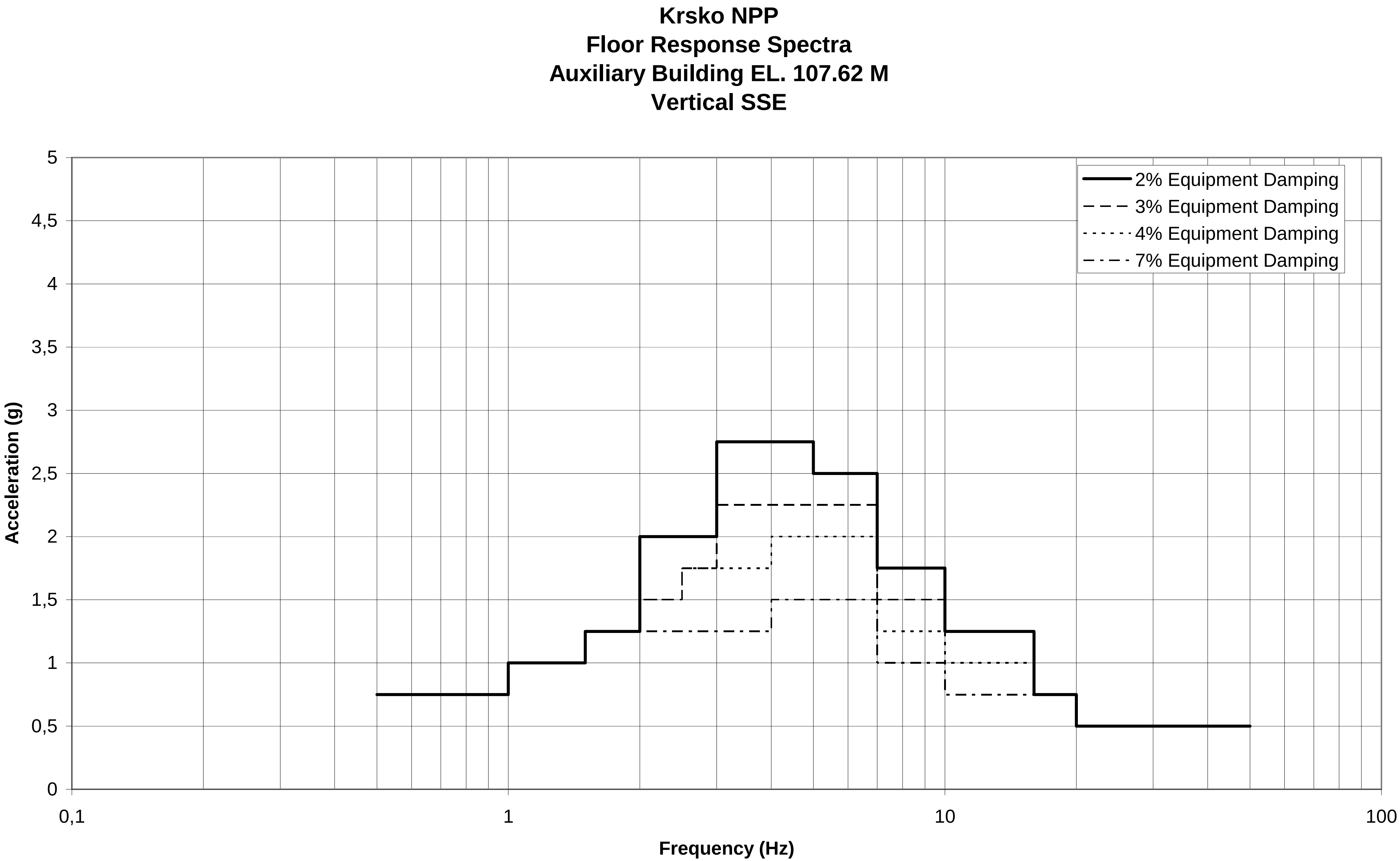
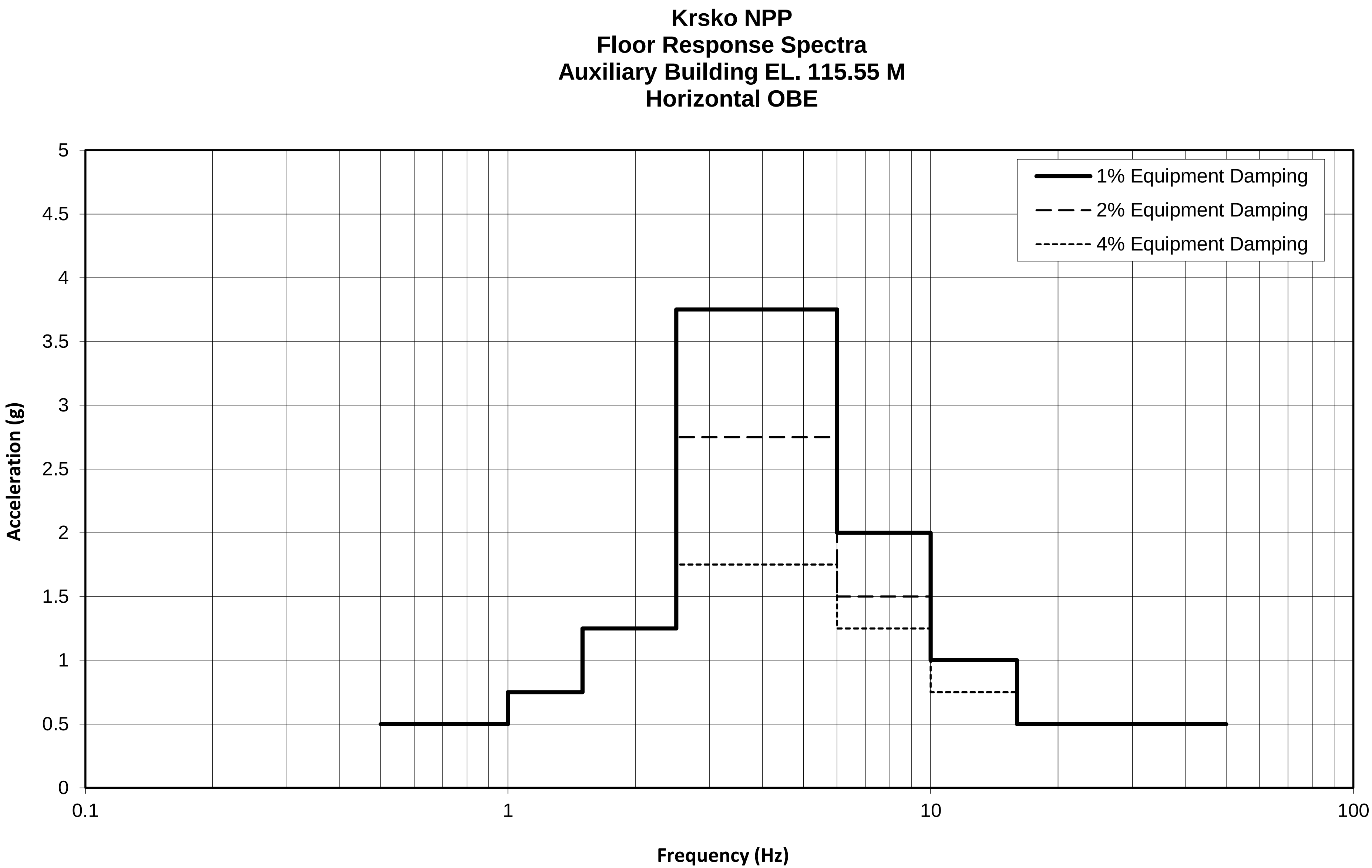

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 107.62 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

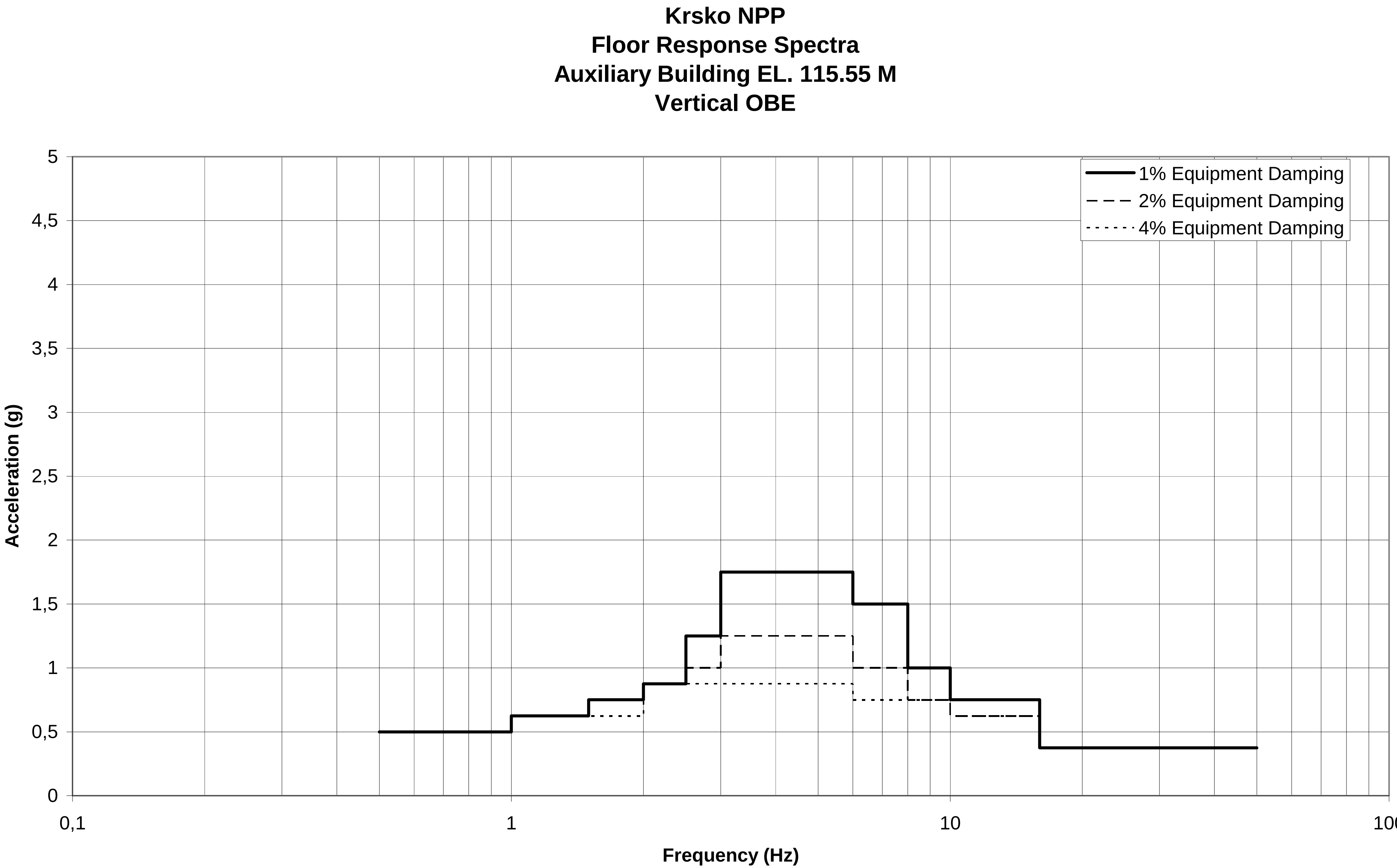
Figure A41

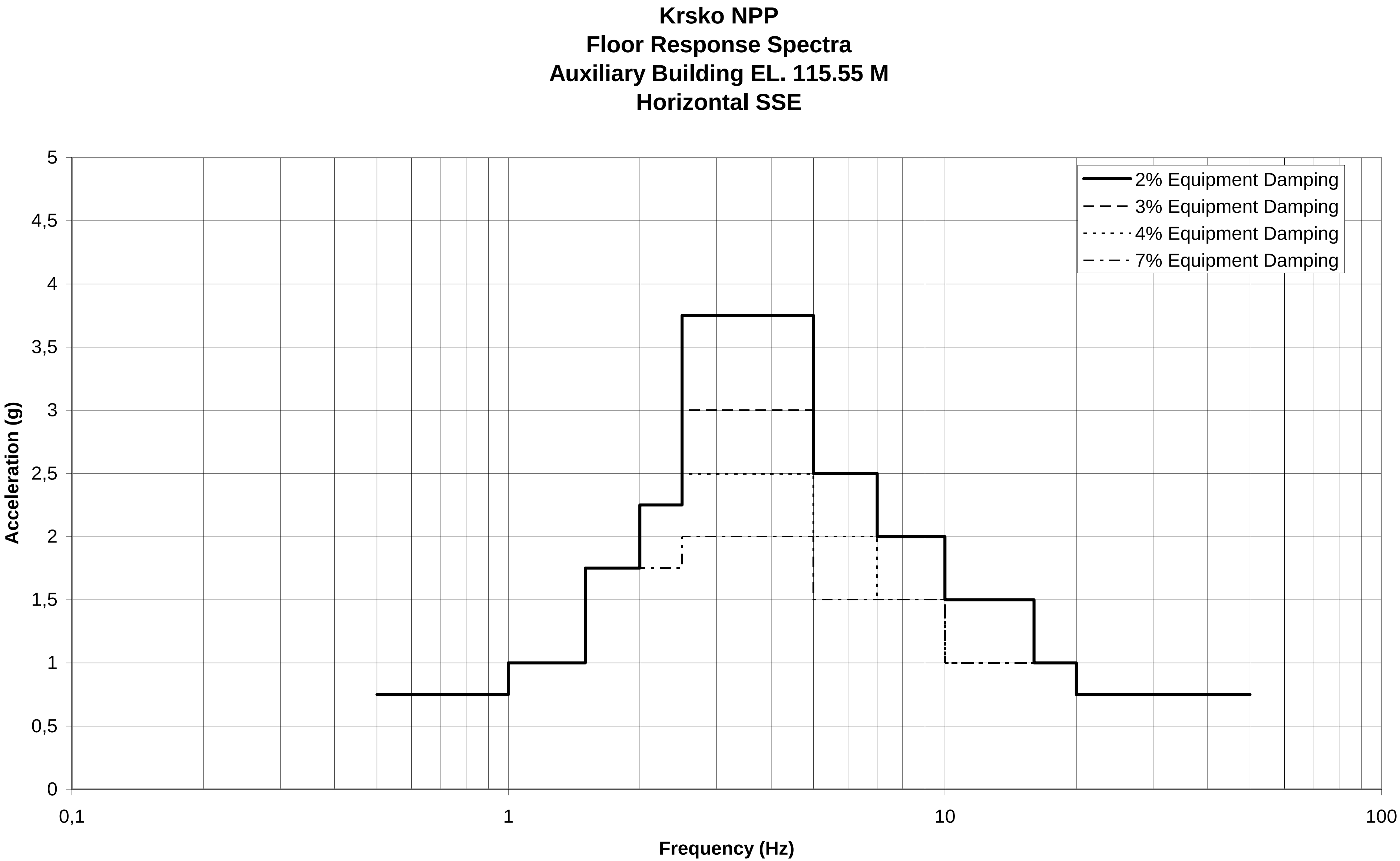

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 107.62 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 107.62 M
Horizontal SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 107.62 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 115.55 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
1
10
100


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

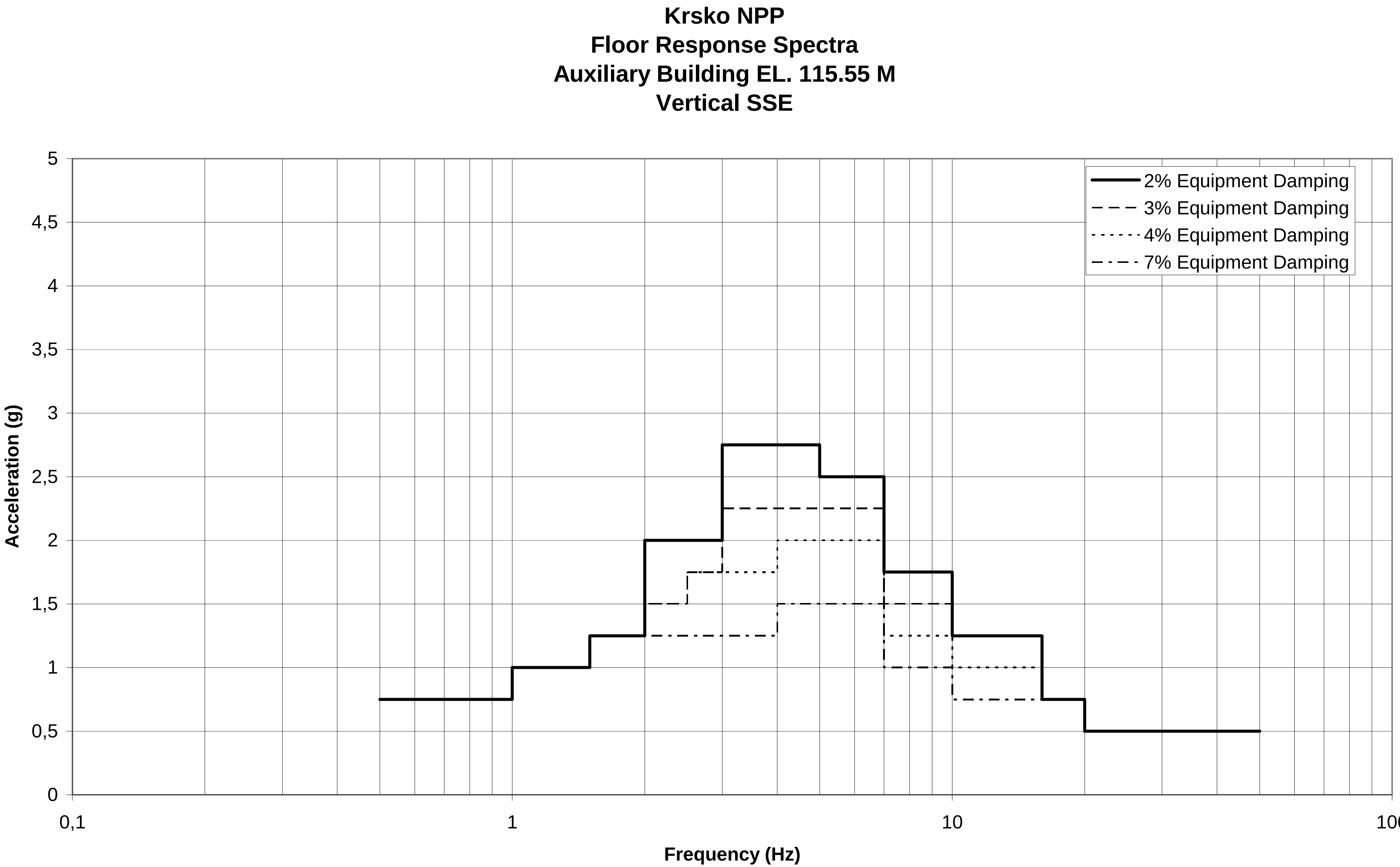
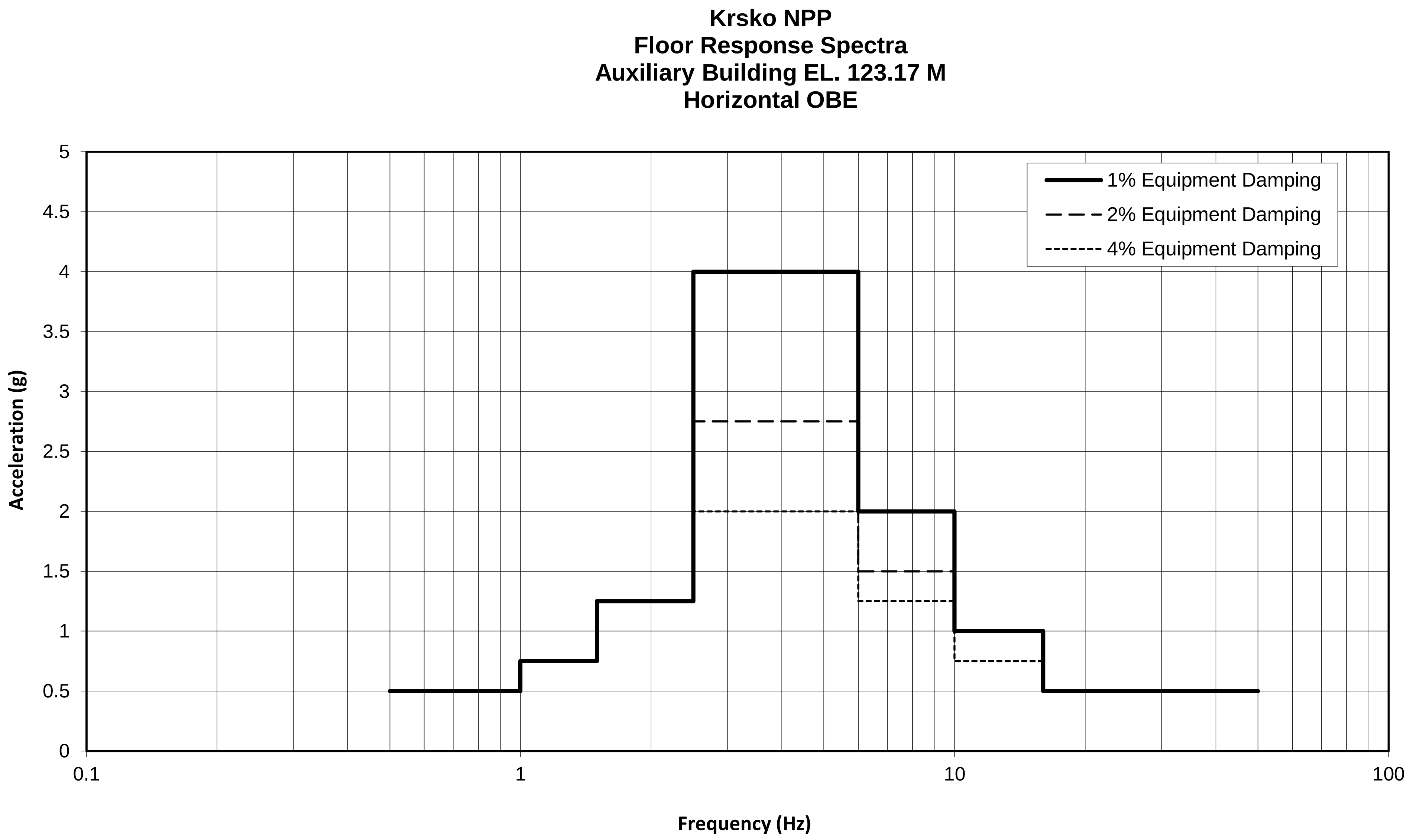
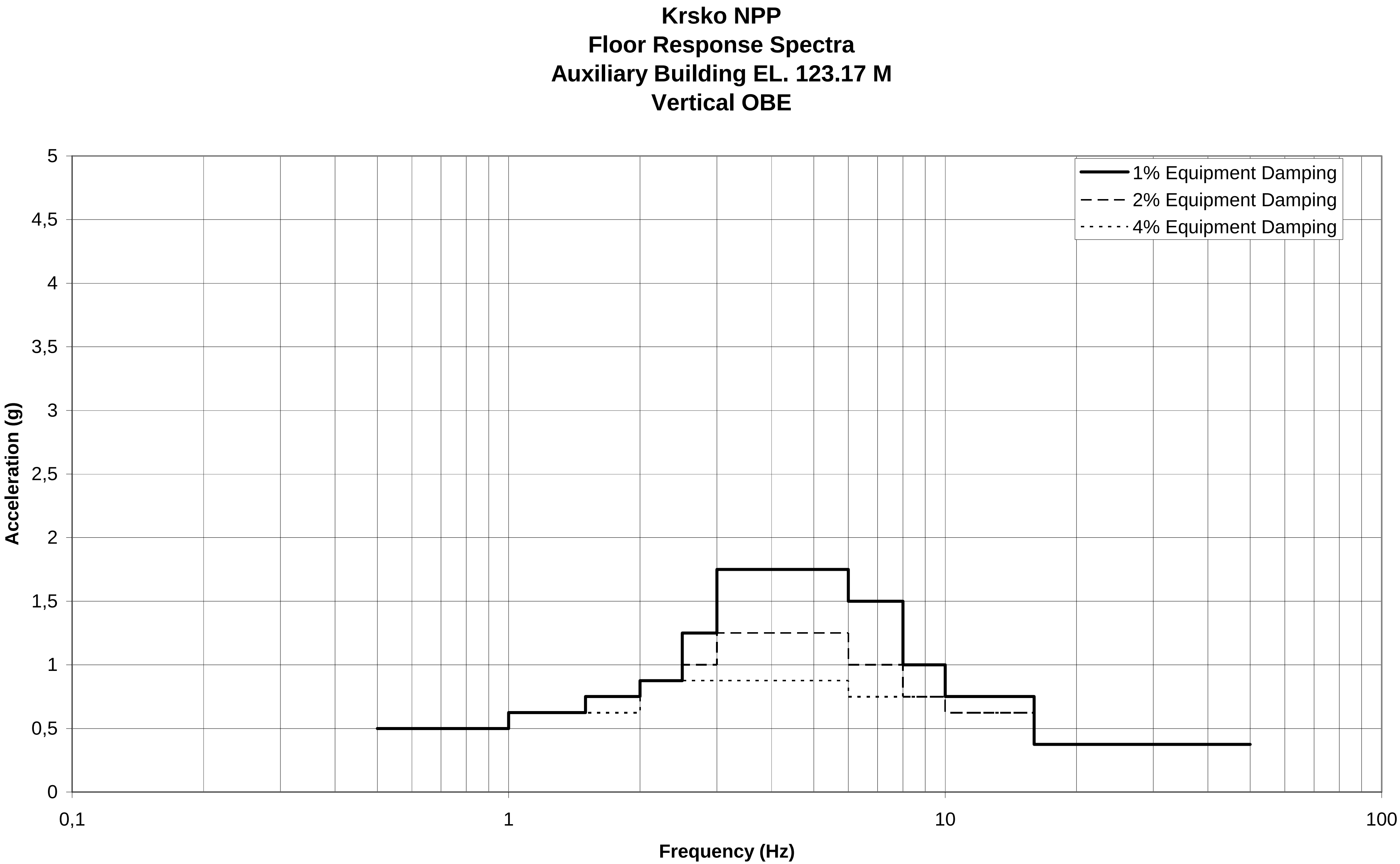

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 115.55 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A48


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 123.17 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
1
10
100


Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 123.17 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

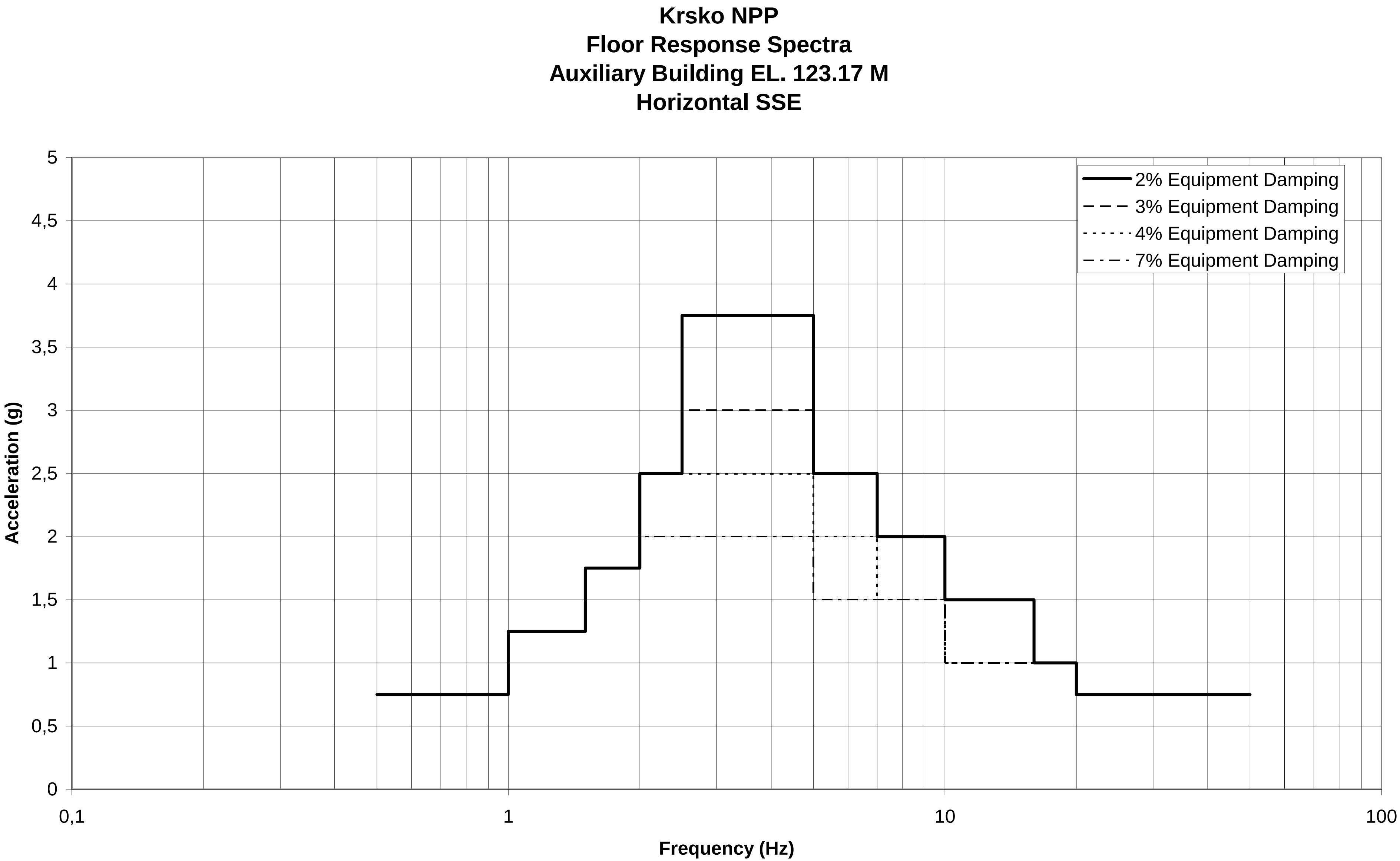
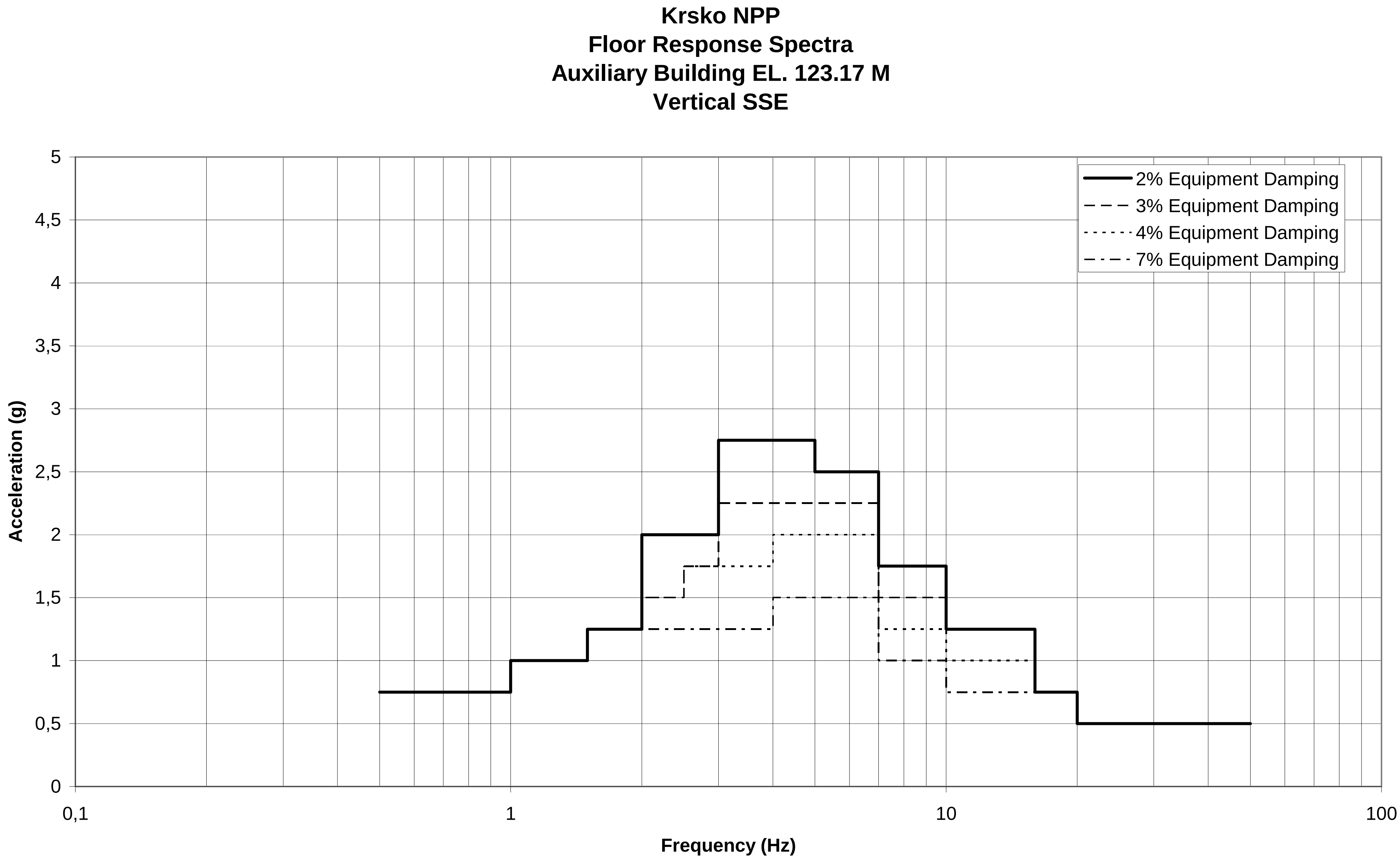

Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 123.17 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

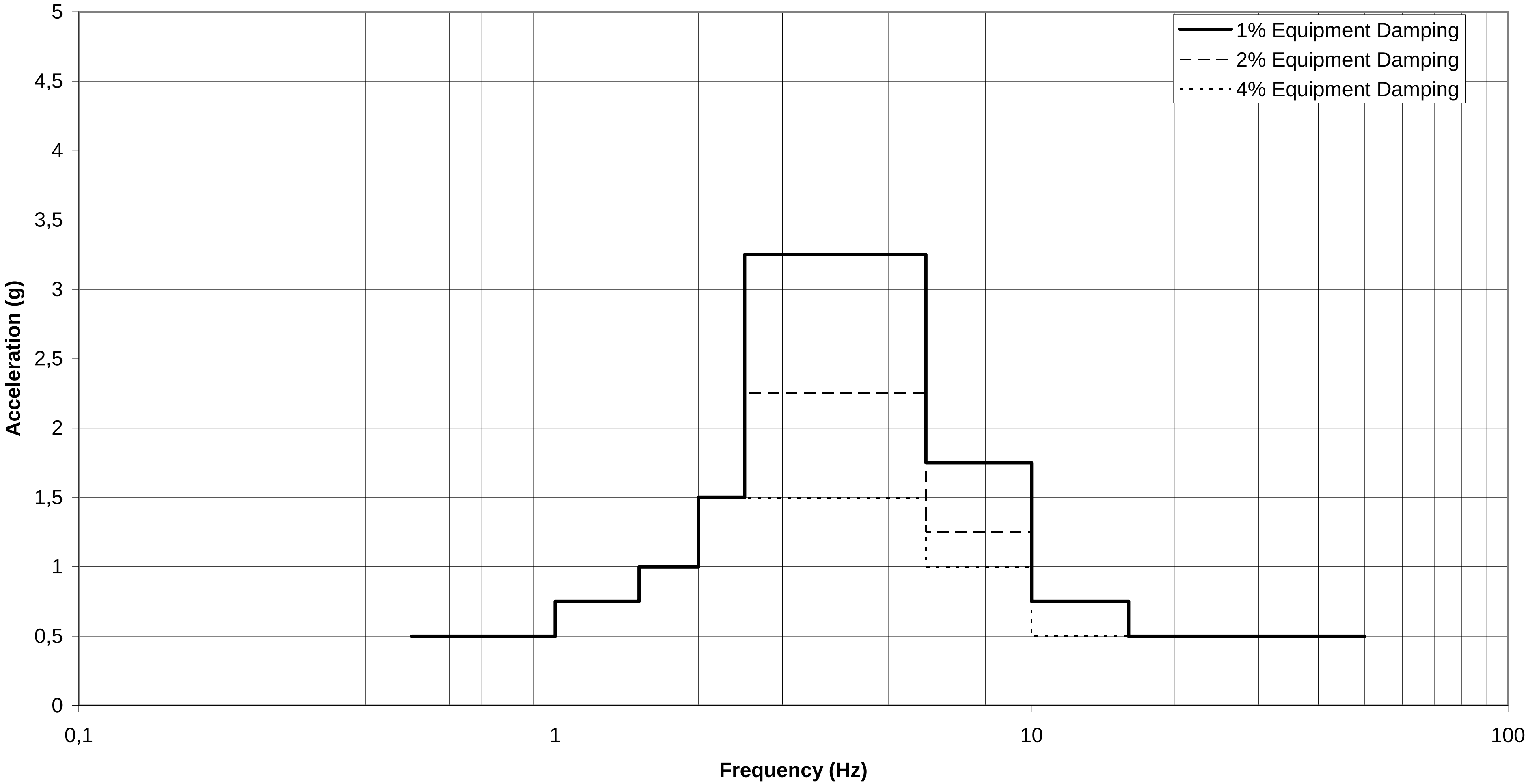
Figure A51



Krsko NPP
Floor Response Spectra
Auxiliary Building EL. 123.17 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A52

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 100.3 M
Horizontal OBE



Krsko NPP
Floor Response Spectra
Intermediate Building EL. 100.3 M
Vertical OBE

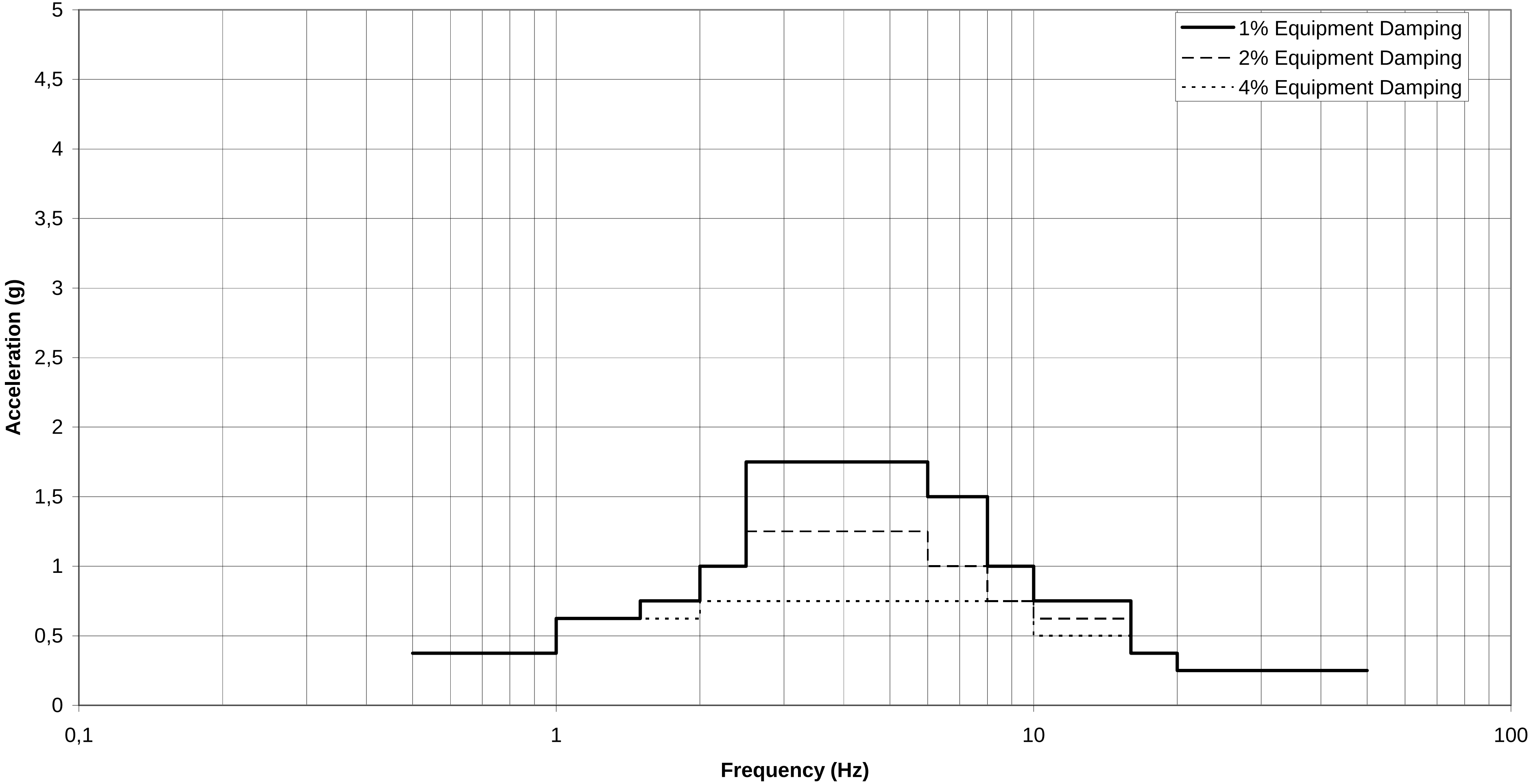


Figure A54

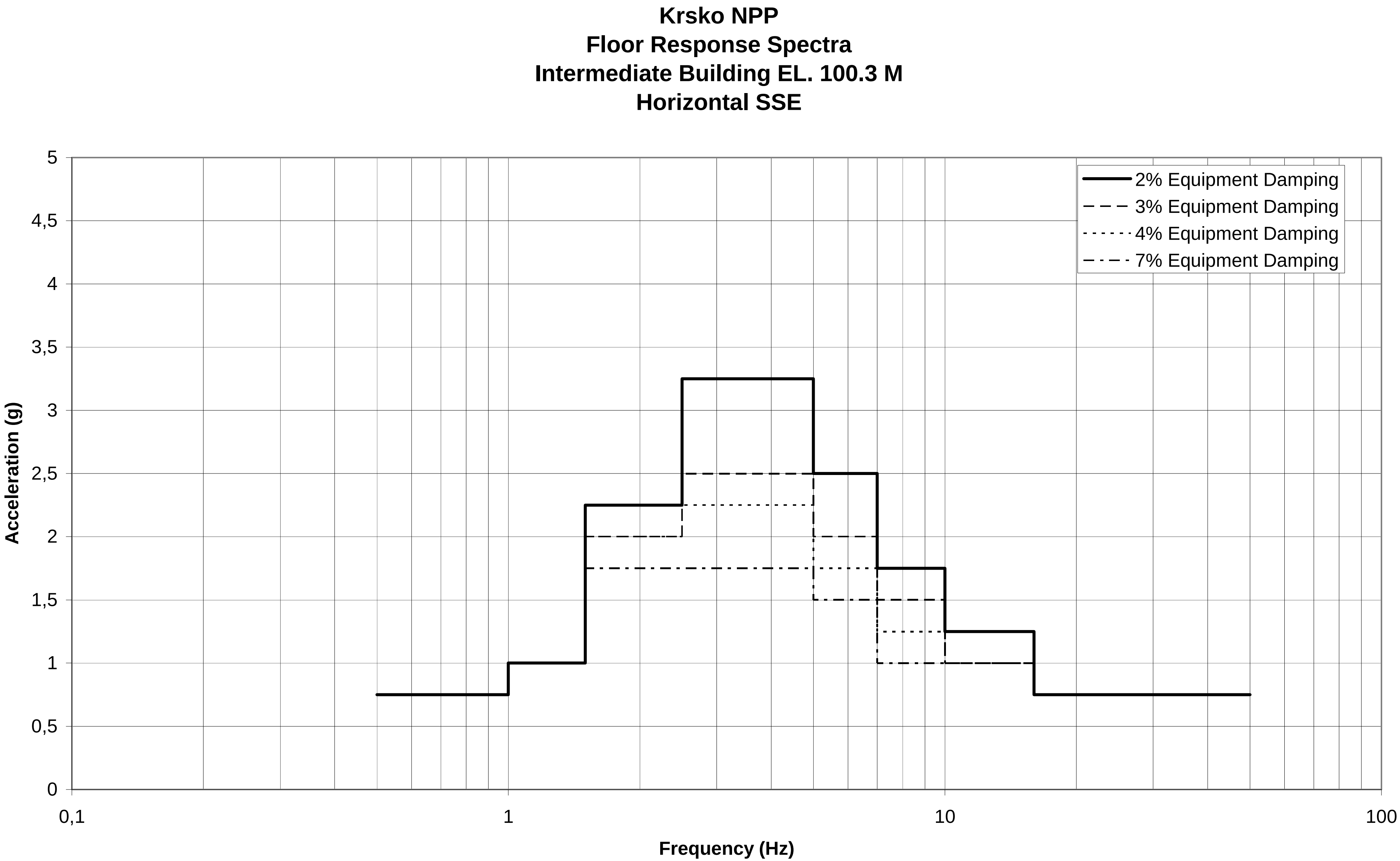
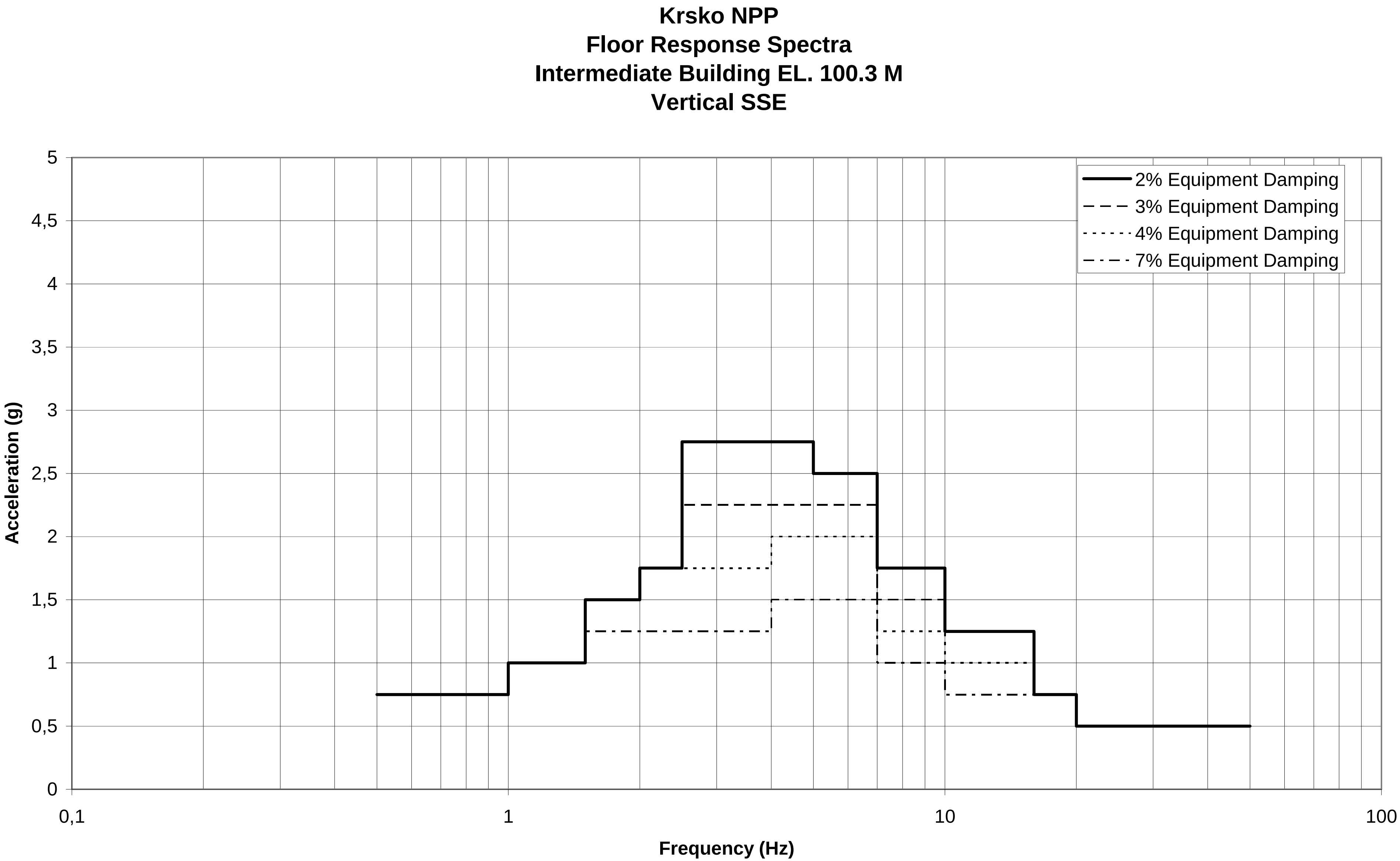

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A55


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 100.3 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

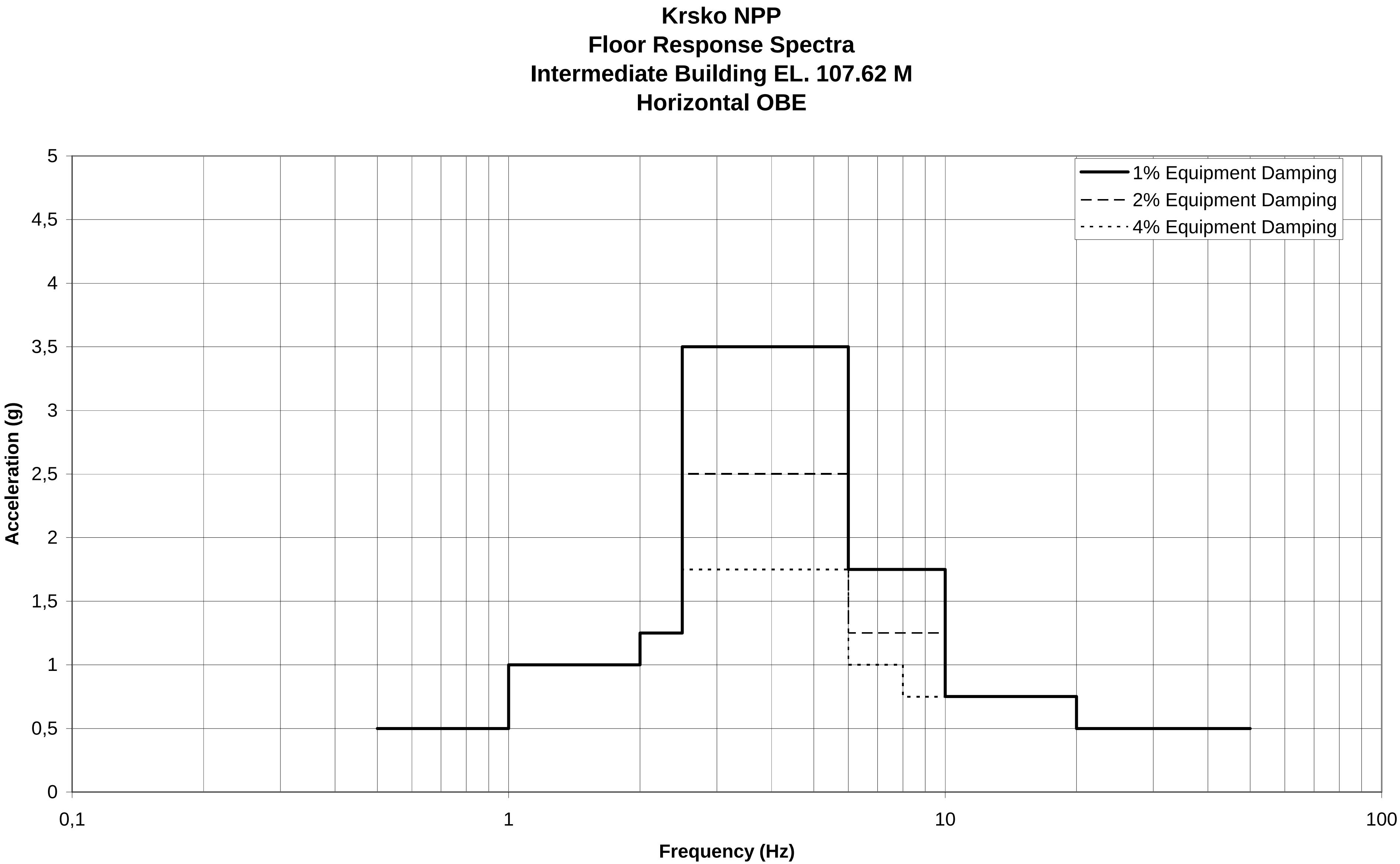

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 107.62 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100

Figure A57

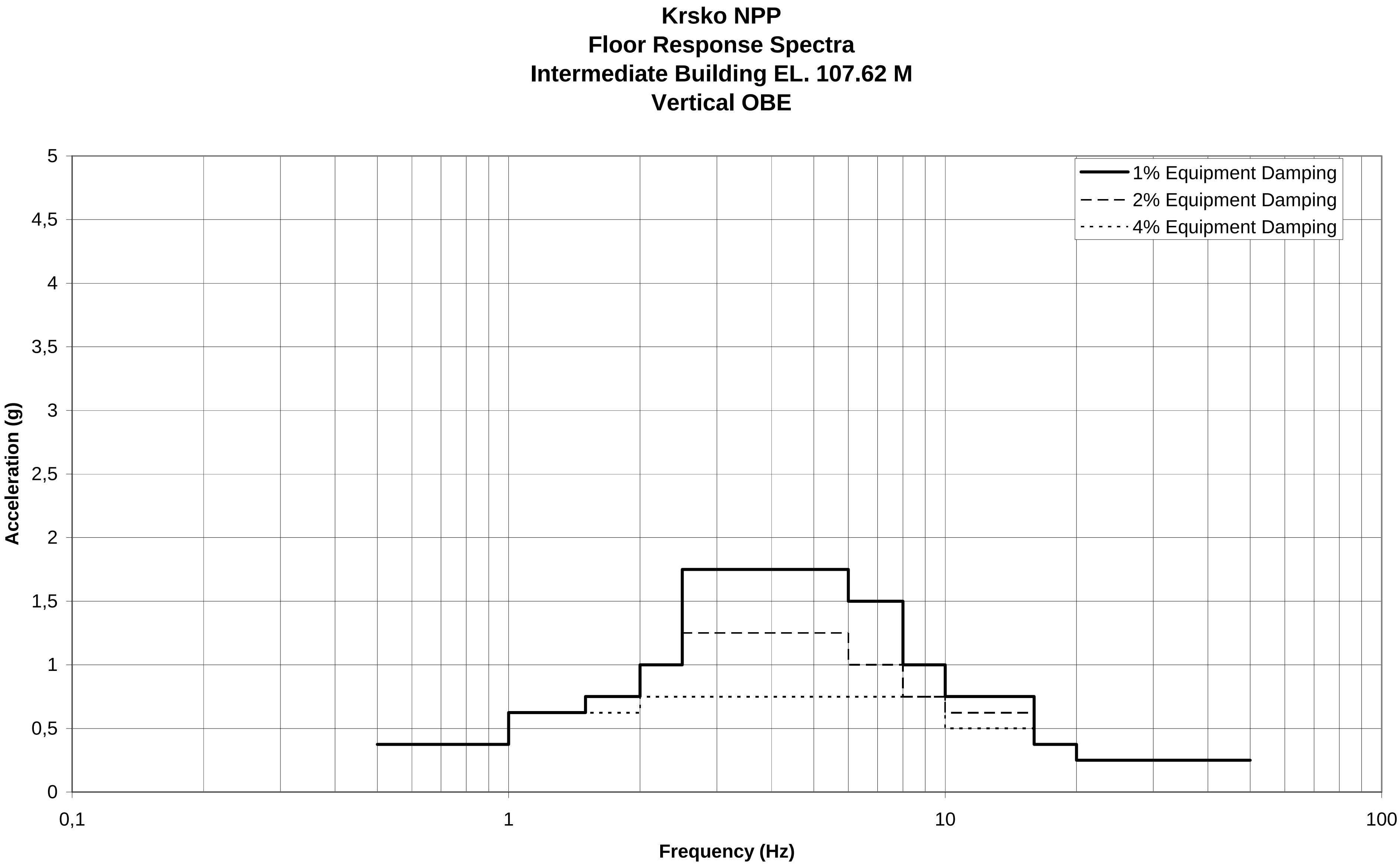
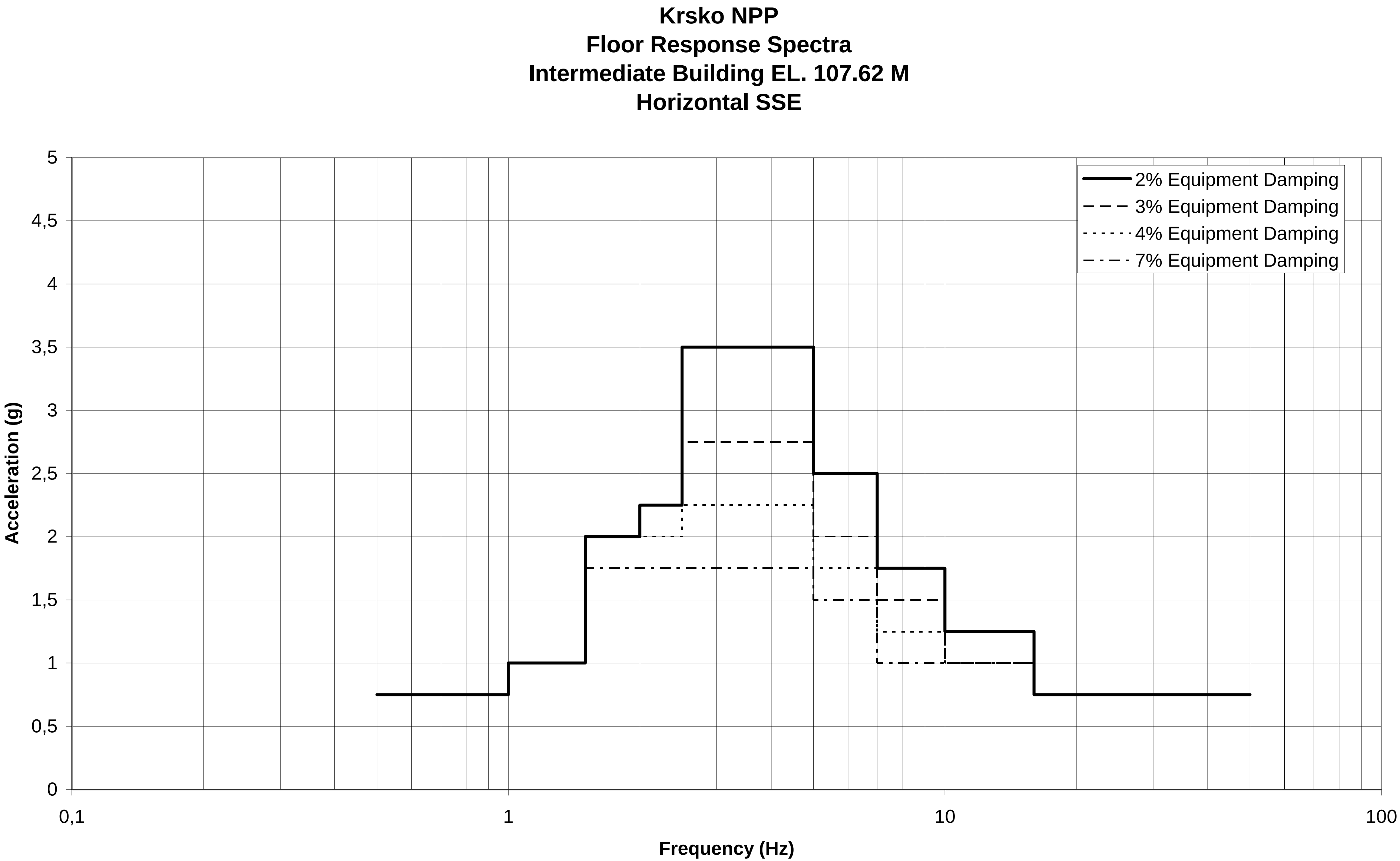

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 107.62 M
Vertical OBE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure A58


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 107.62 M
Horizontal SSE
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

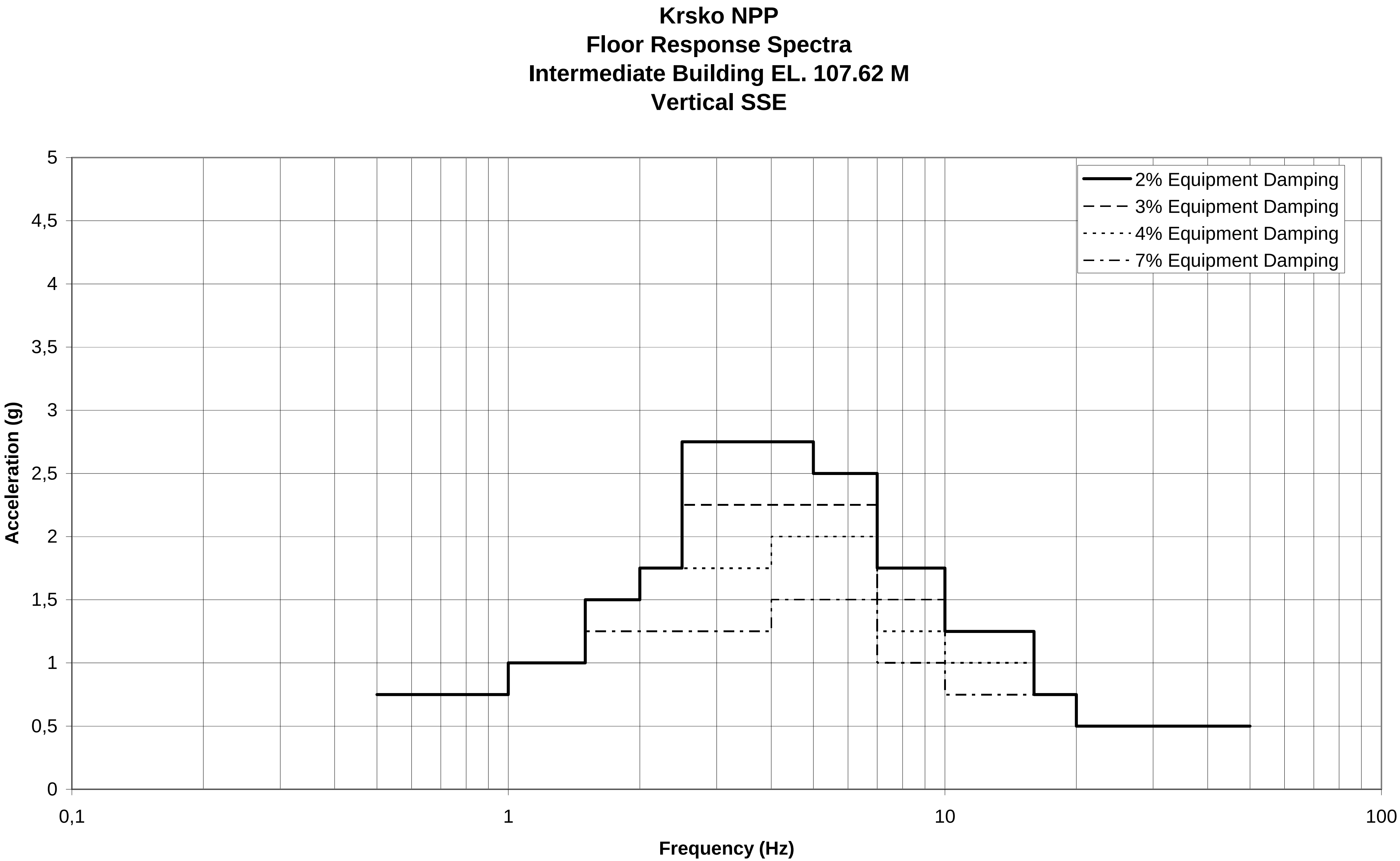
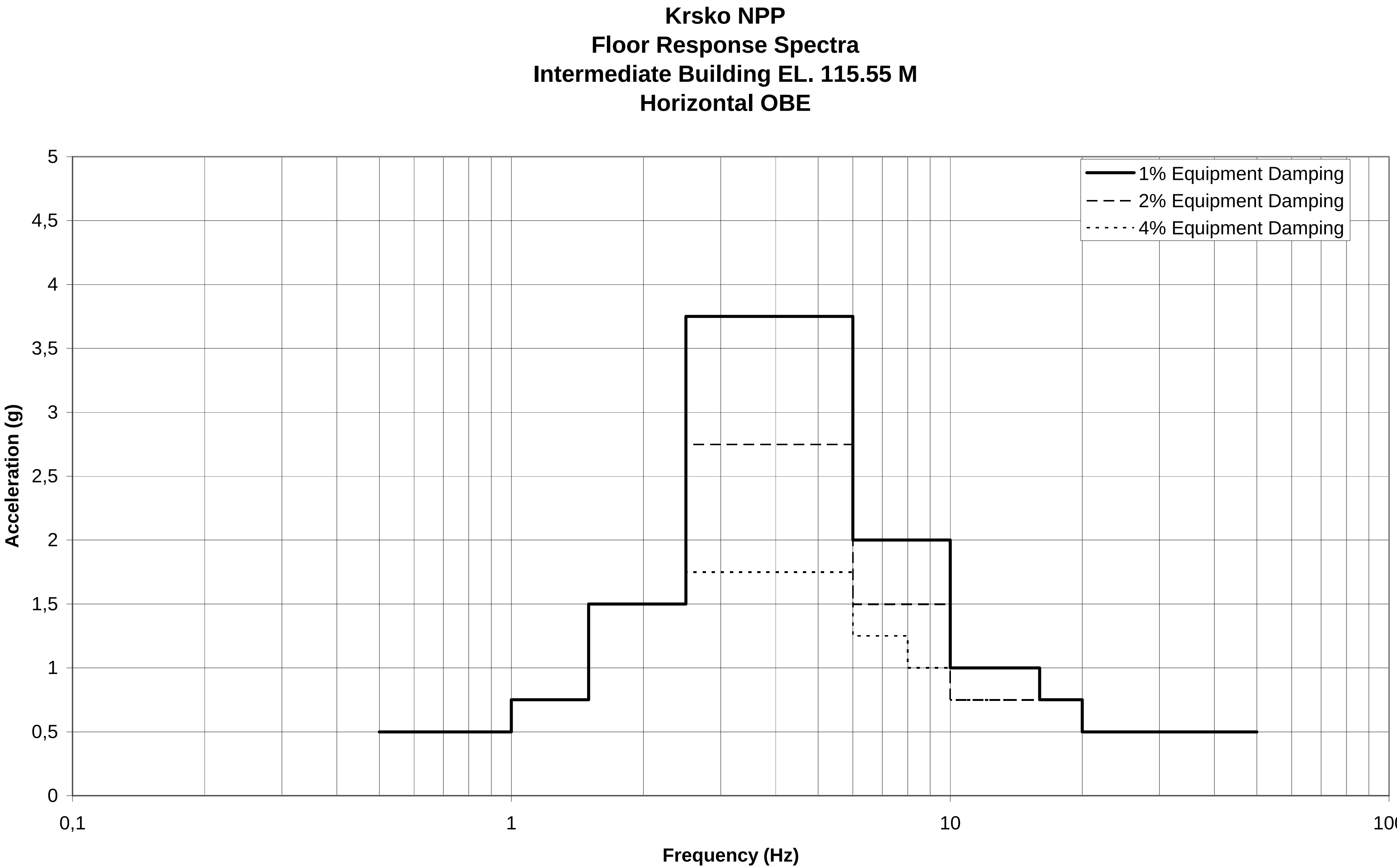

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 107.62 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A60


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 115.55 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

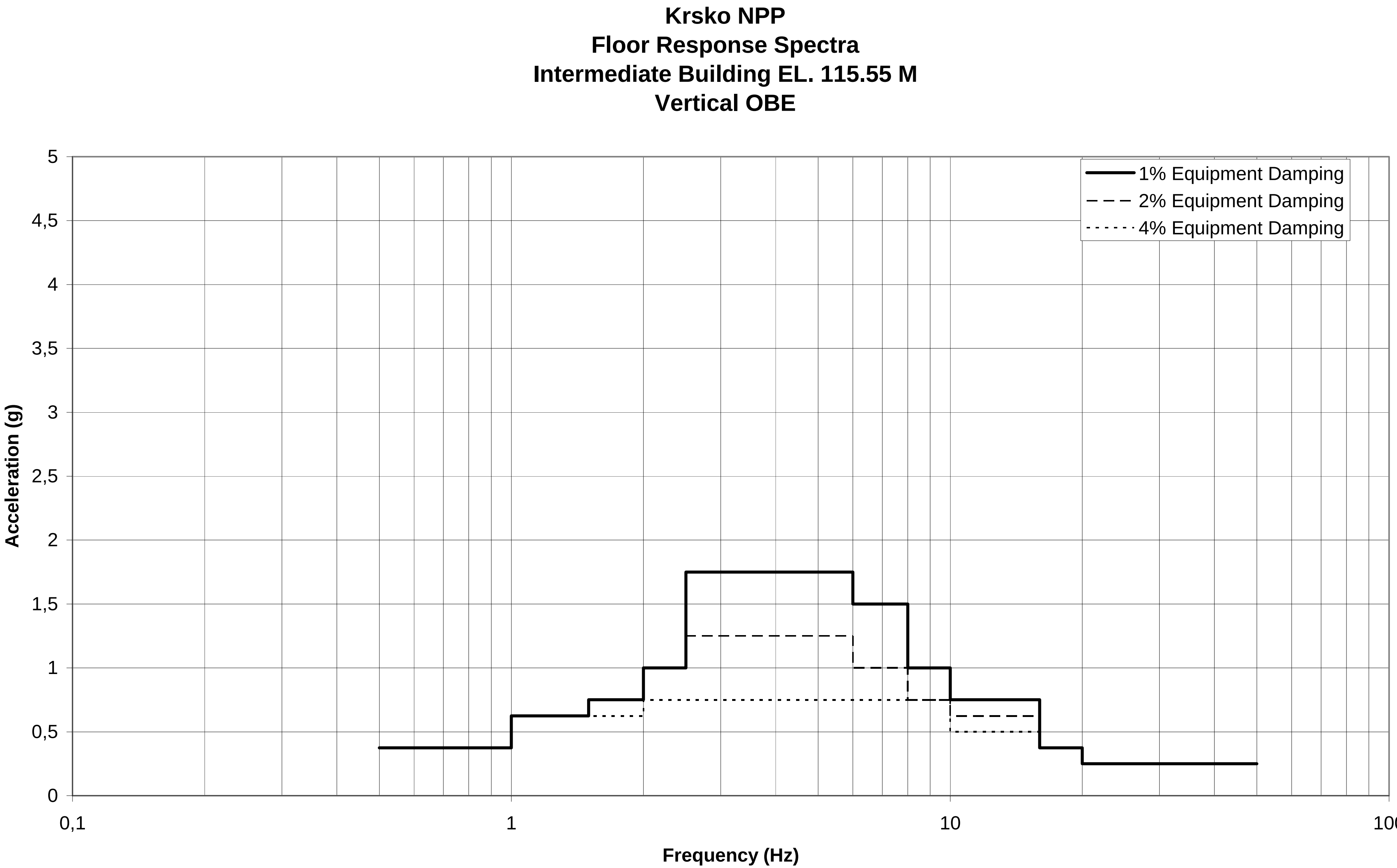

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A62

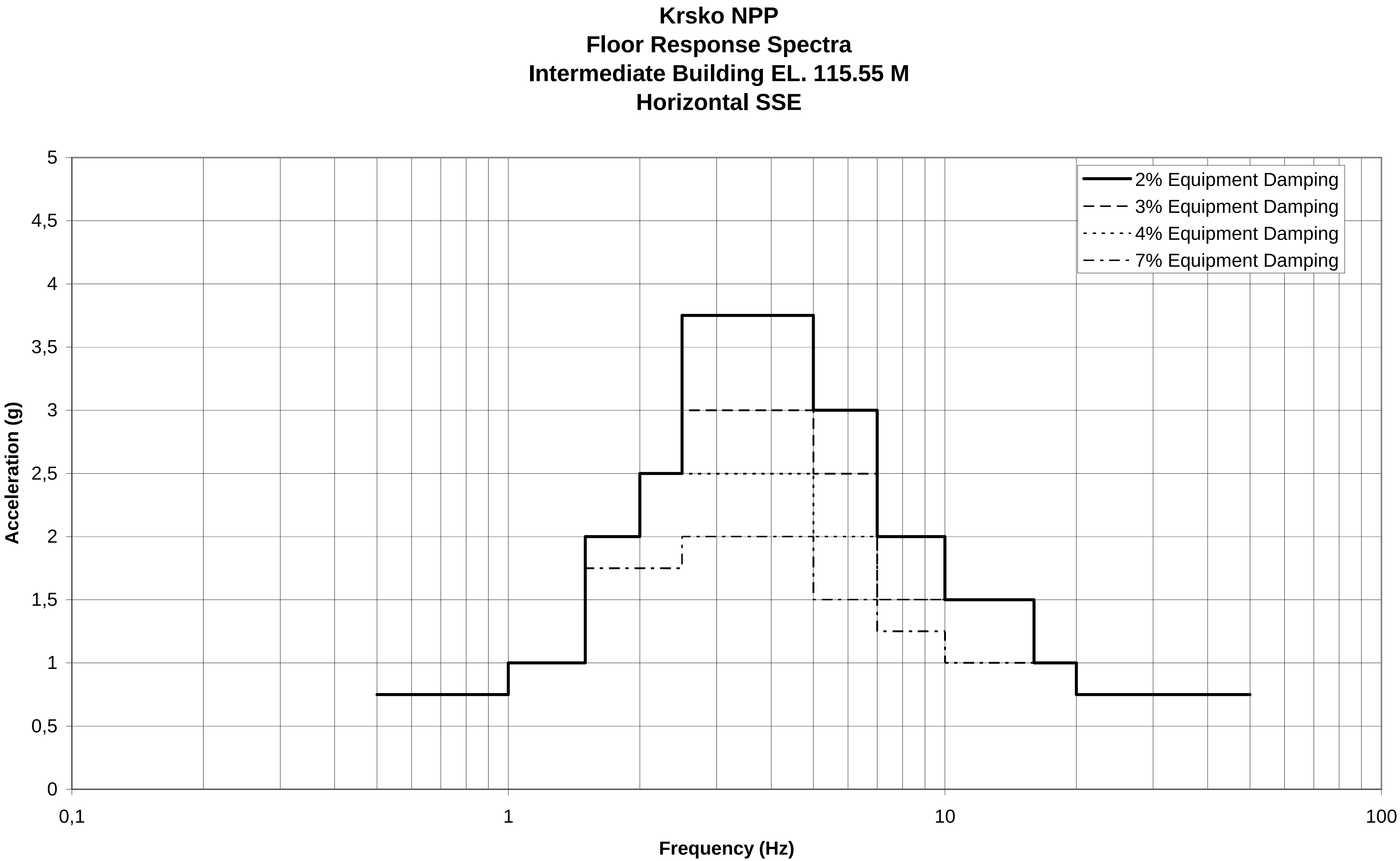
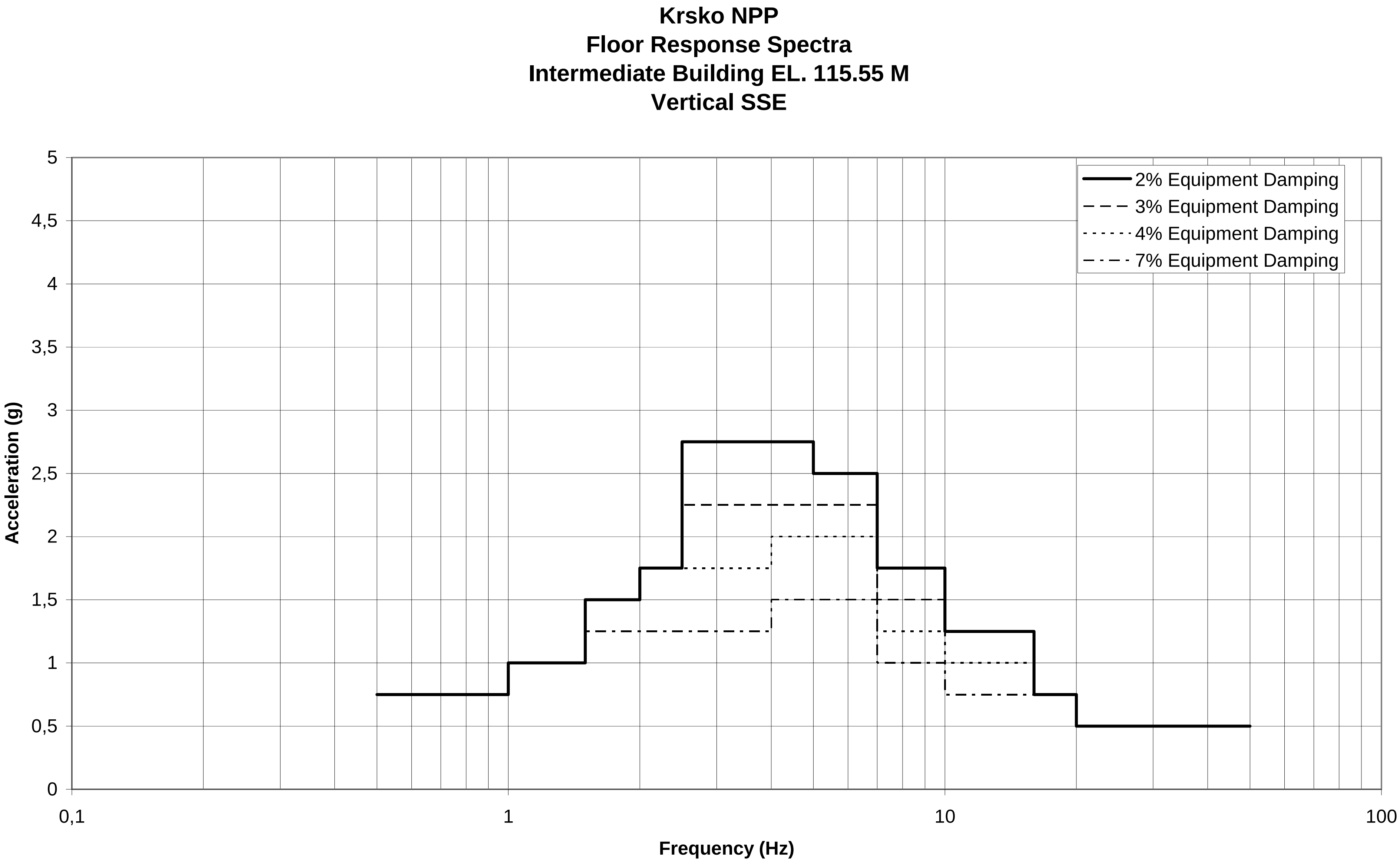
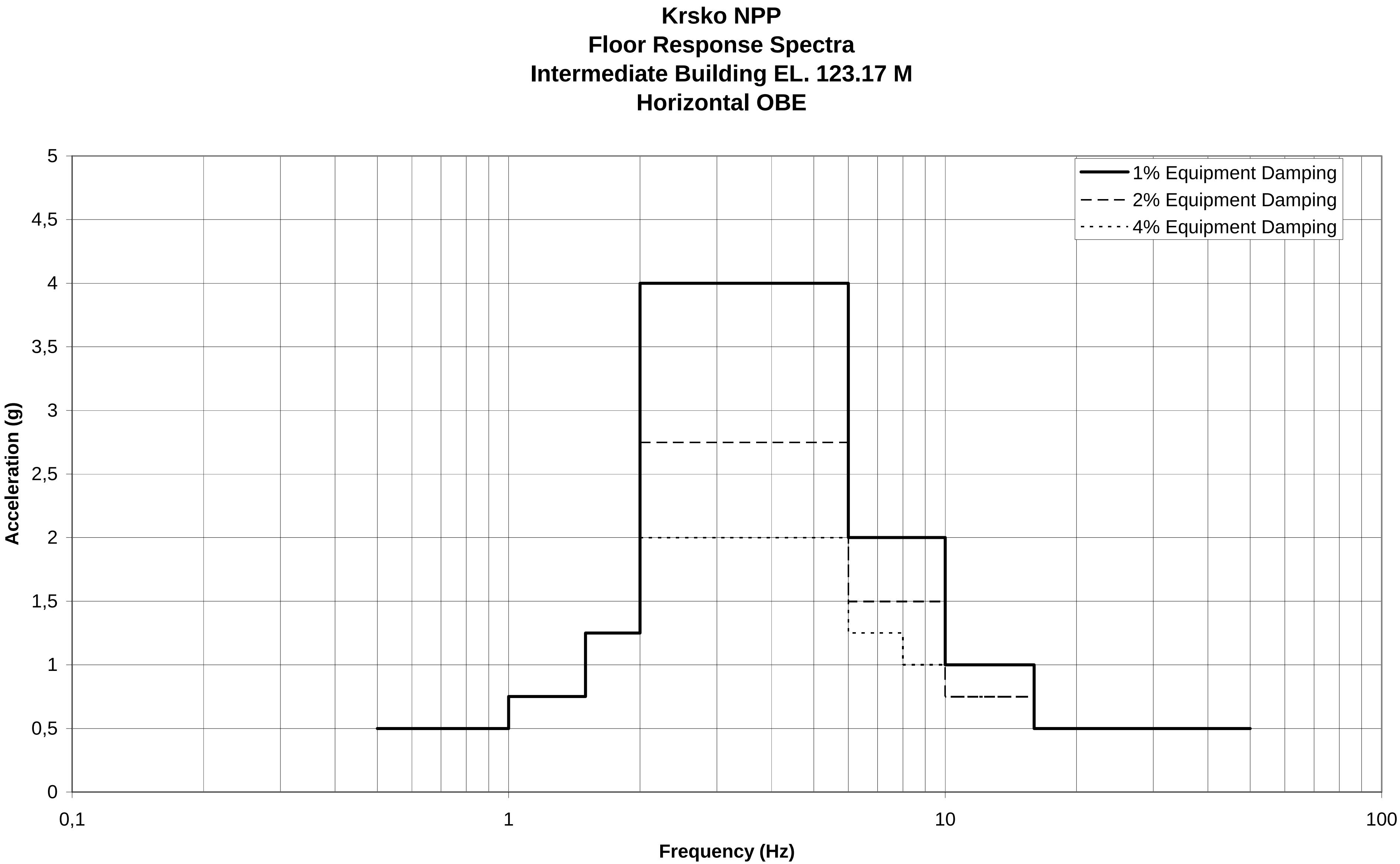
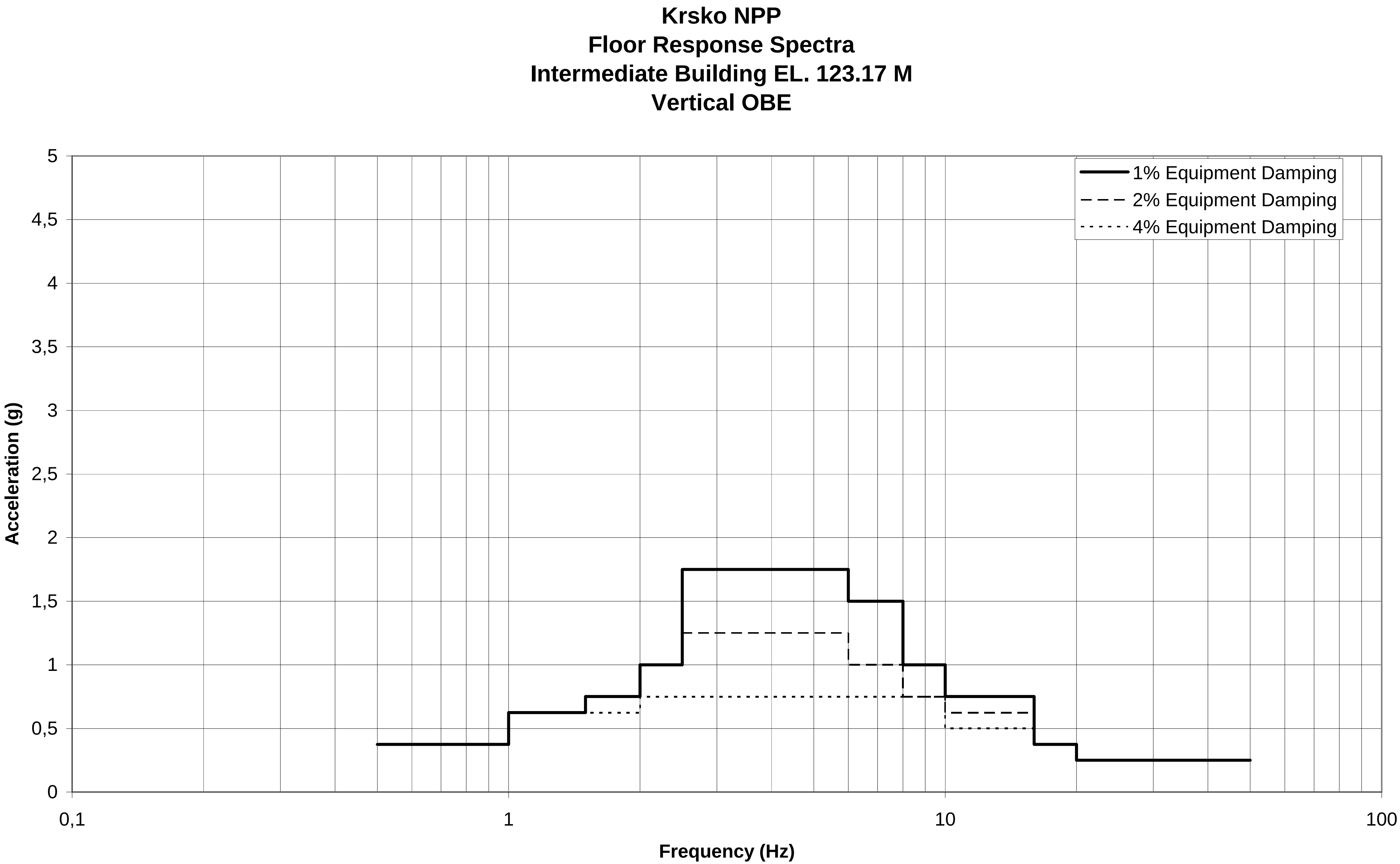
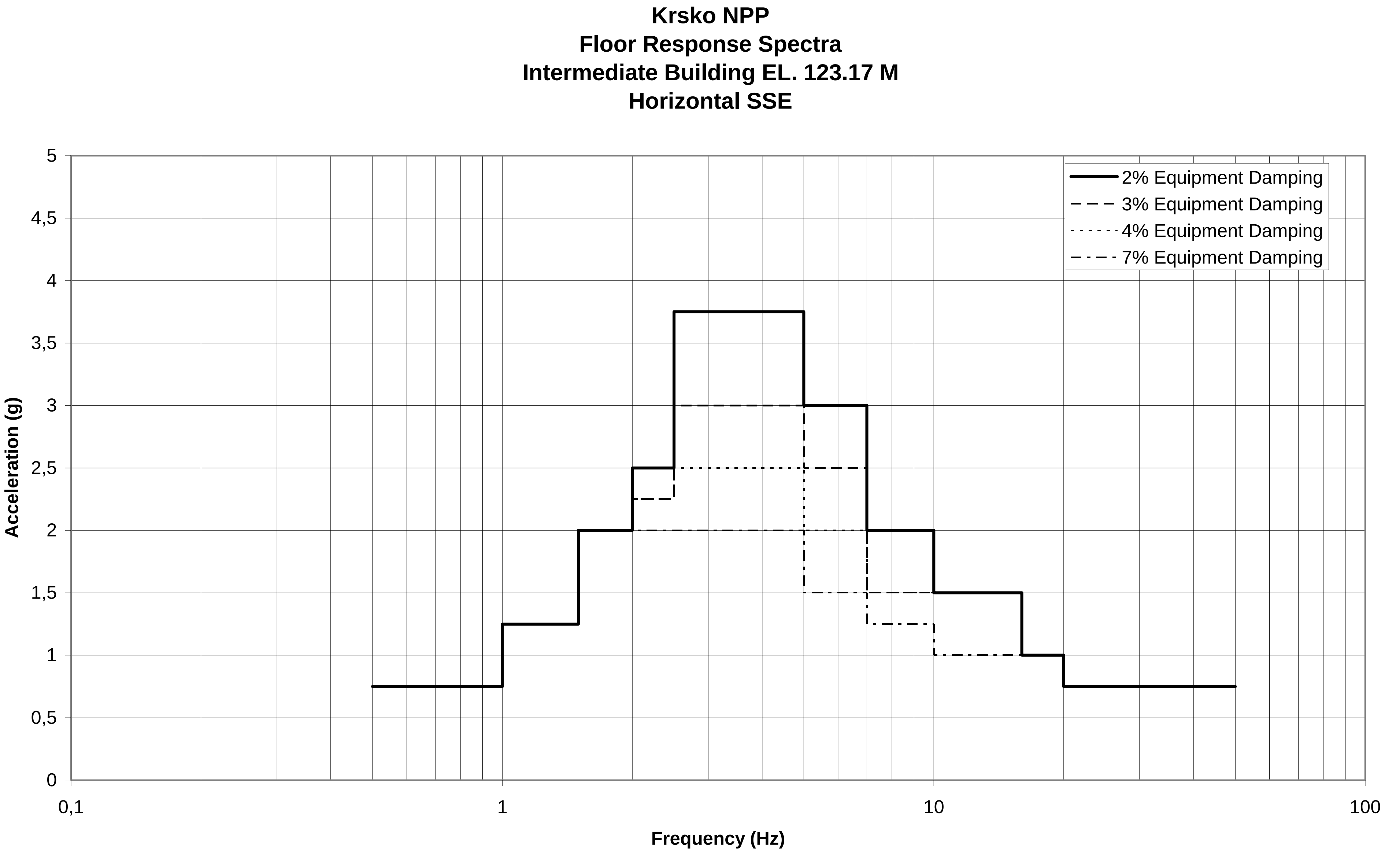

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A63


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 115.55 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 123.17 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 123.17 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Intermediate Building EL. 123.17 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

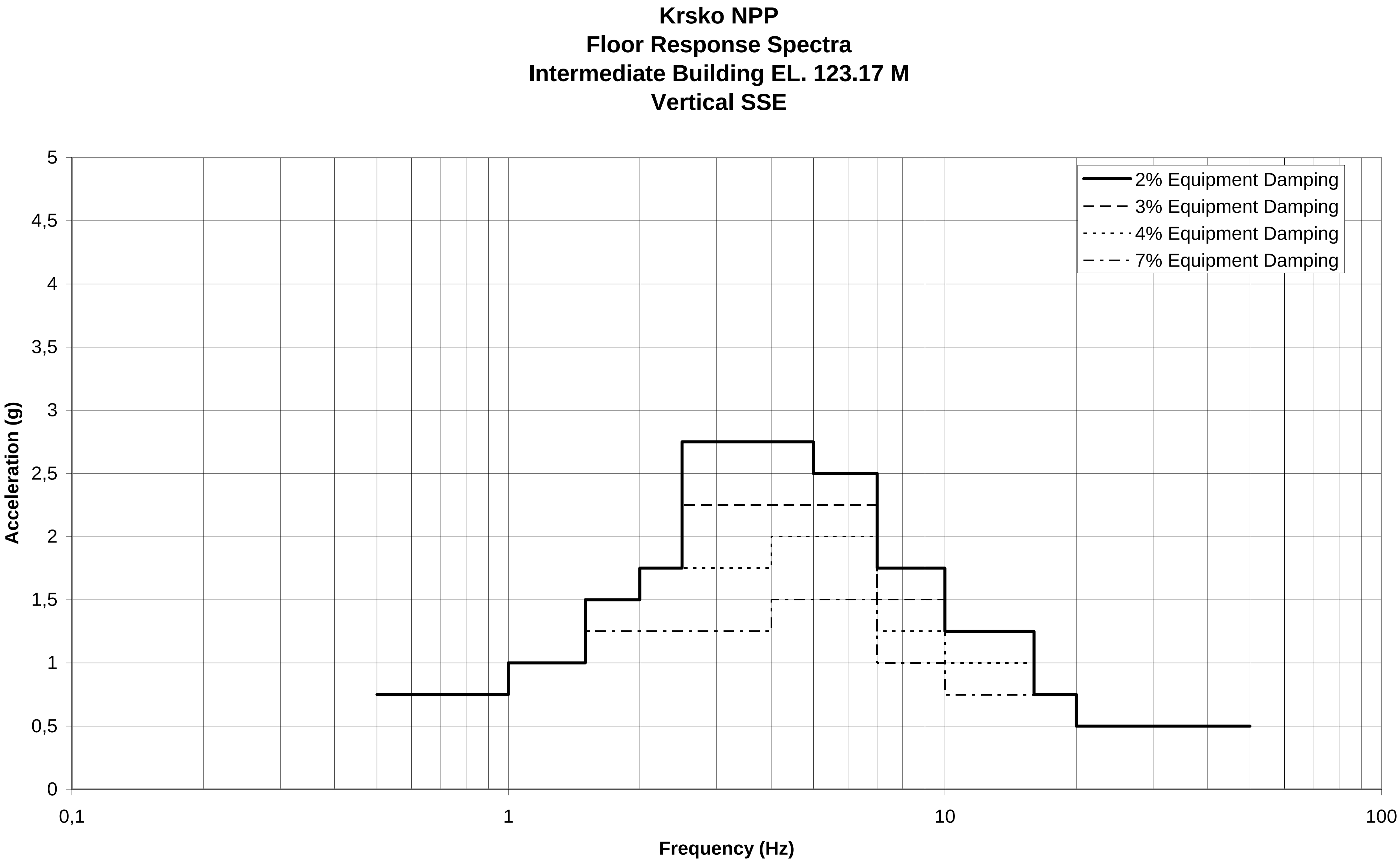
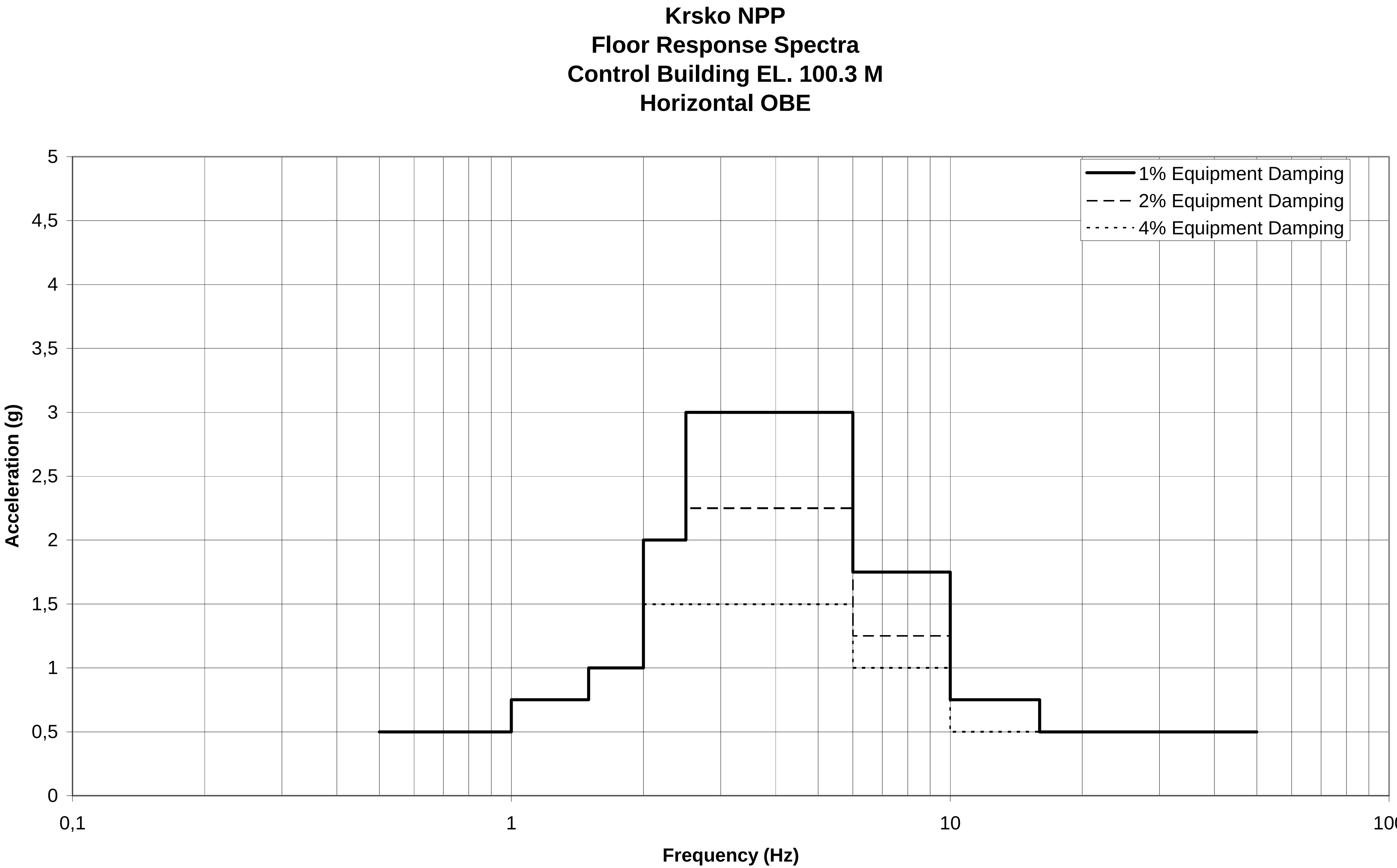
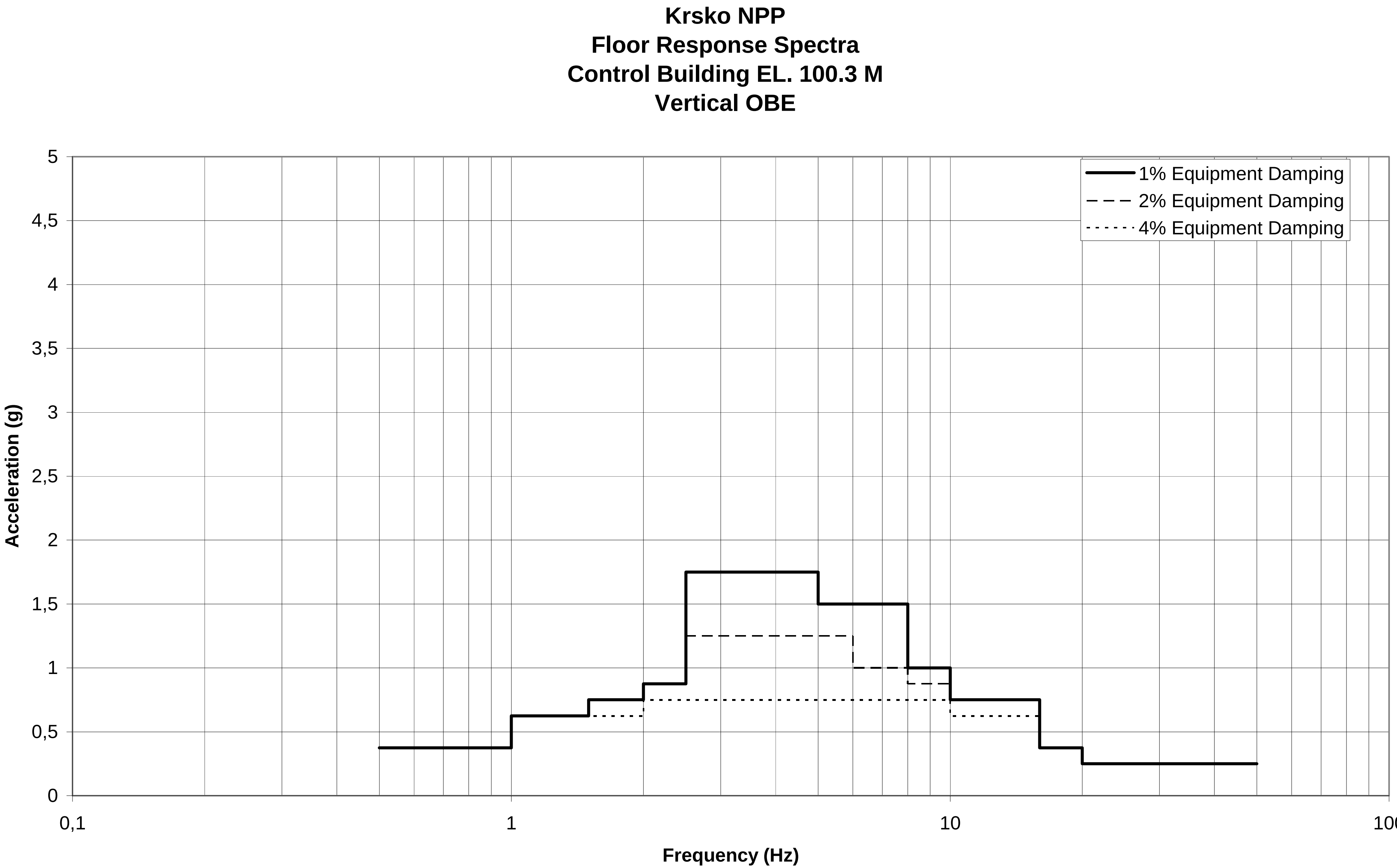

Krsko NPP
Floor Response Spectra
Intermediate Building EL. 123.17 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
Frequency (Hz)
0,1
1
10
100

Figure A68


Krsko NPP
Floor Response Spectra
Control Building EL. 100.3 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Control Building EL. 100.3 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

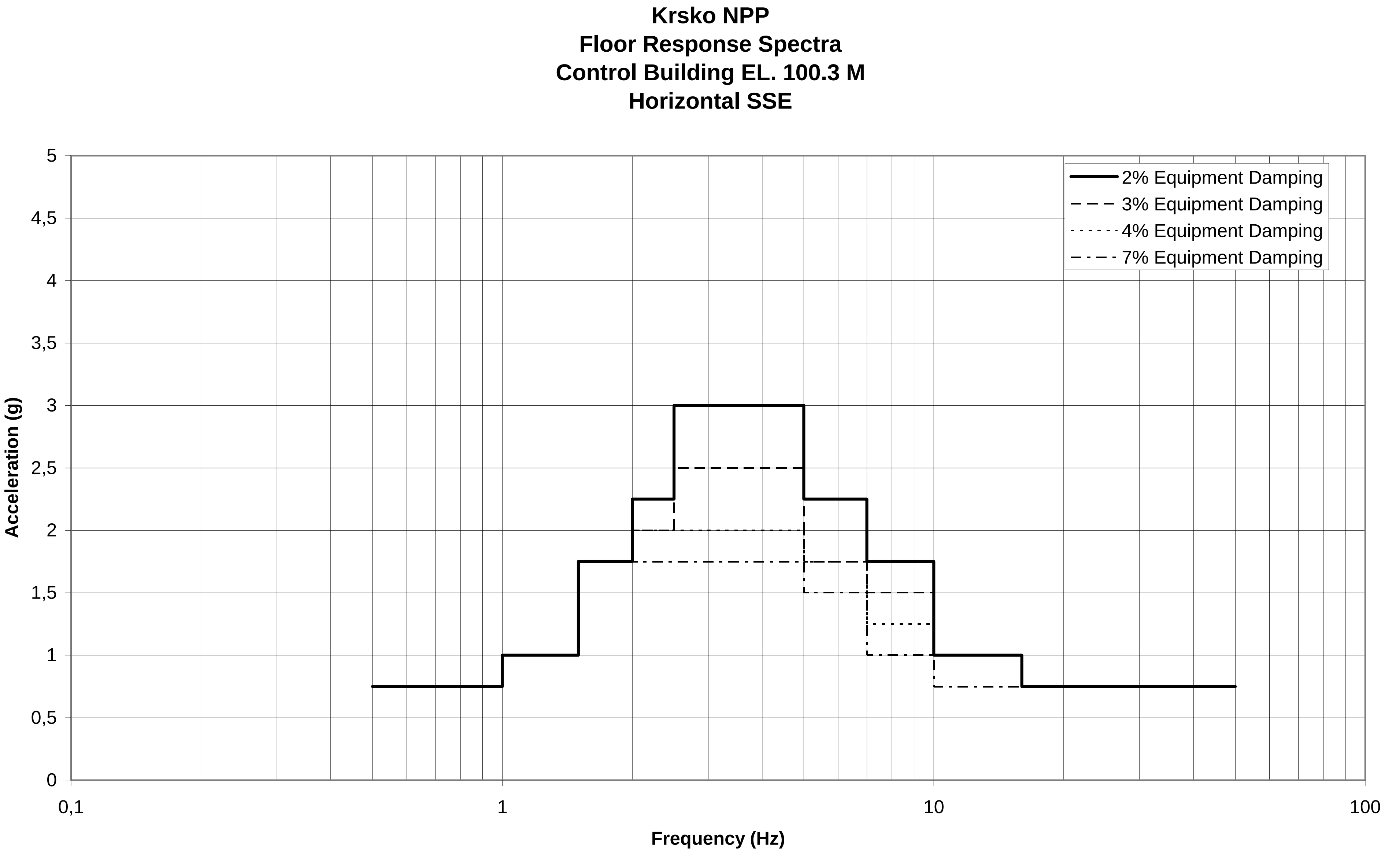
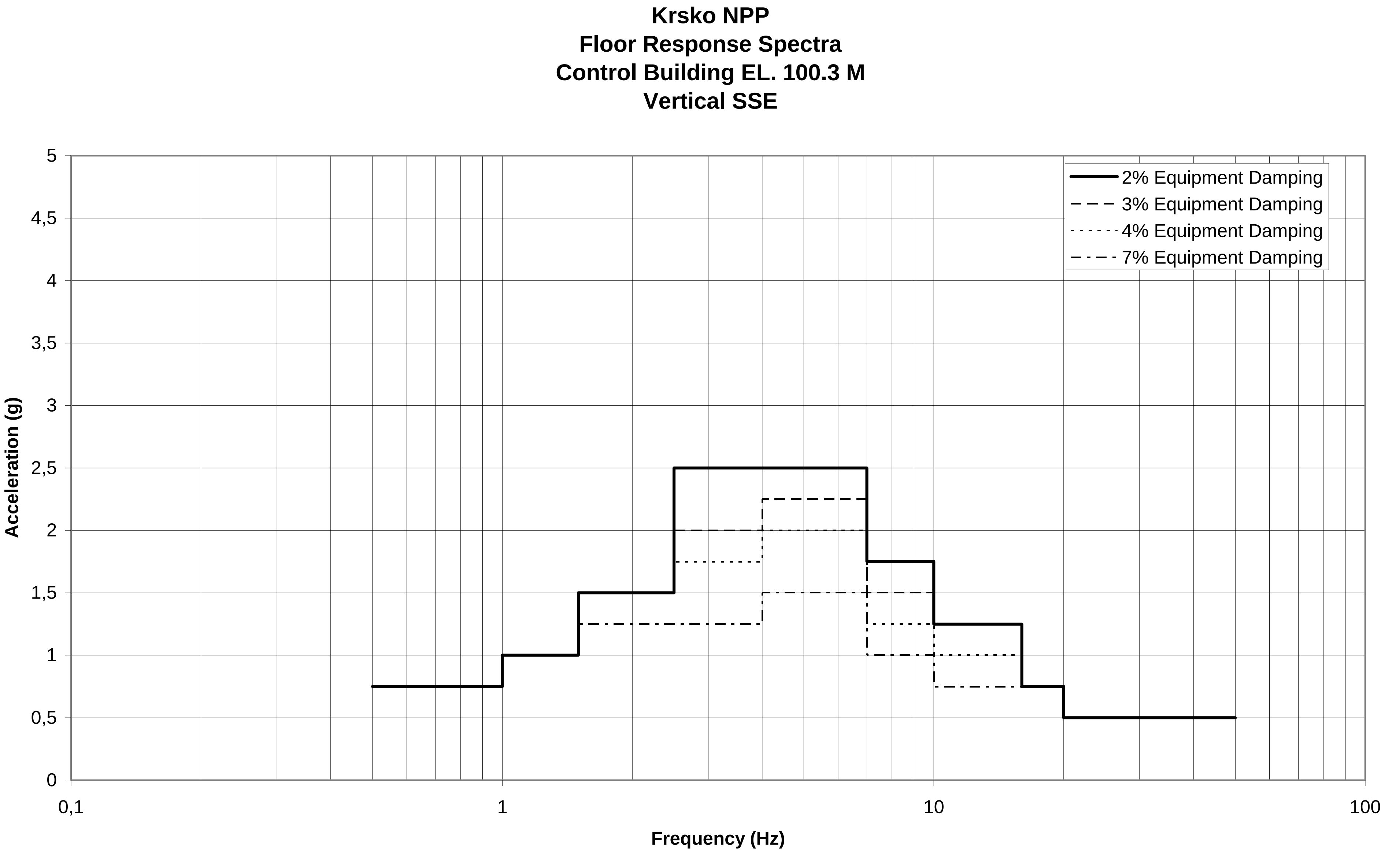

Krsko NPP
Floor Response Spectra
Control Building EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A71


Krsko NPP
Floor Response Spectra
Control Building EL. 100.3 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

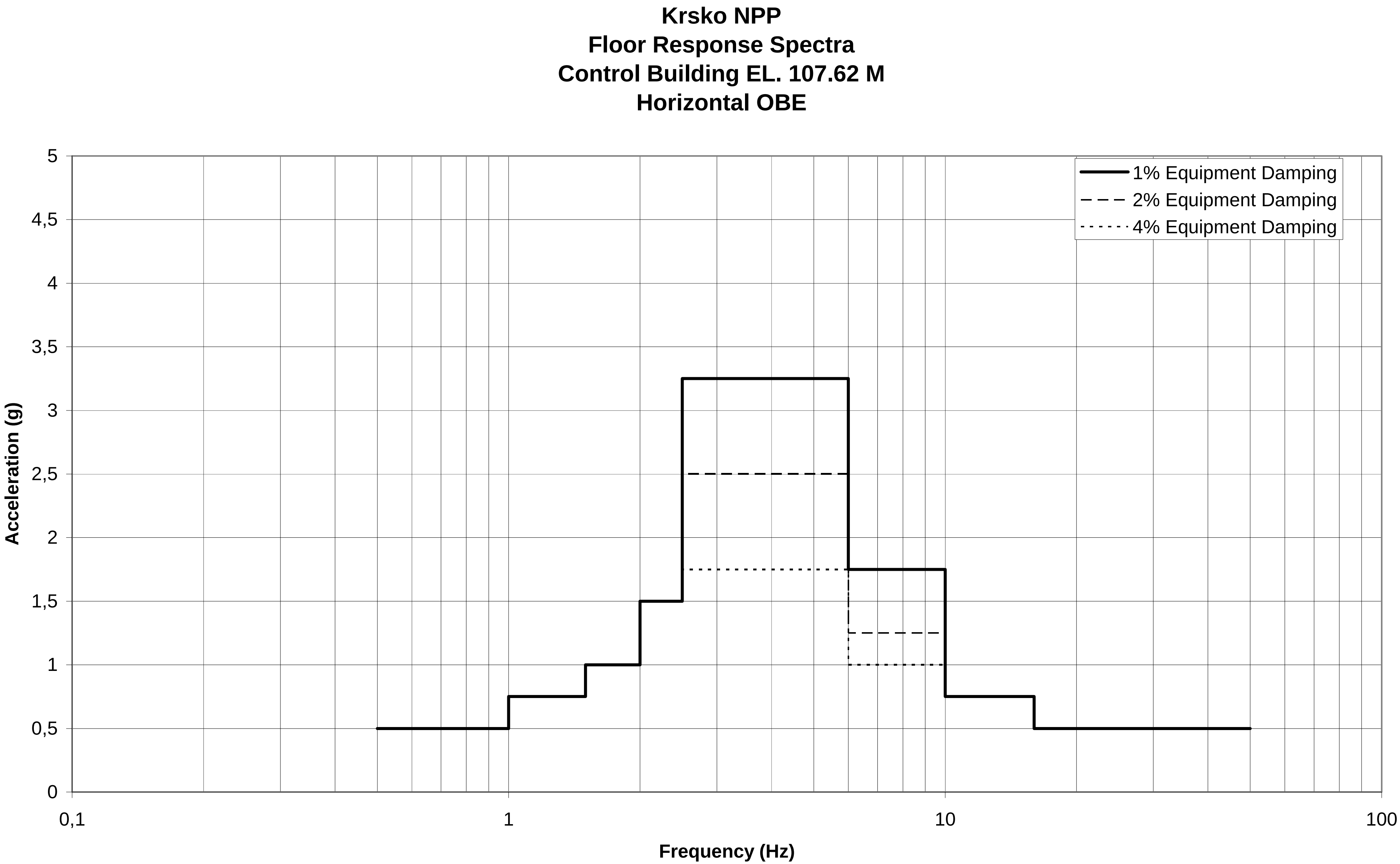

Krsko NPP
Floor Response Spectra
Control Building EL. 107.62 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A73

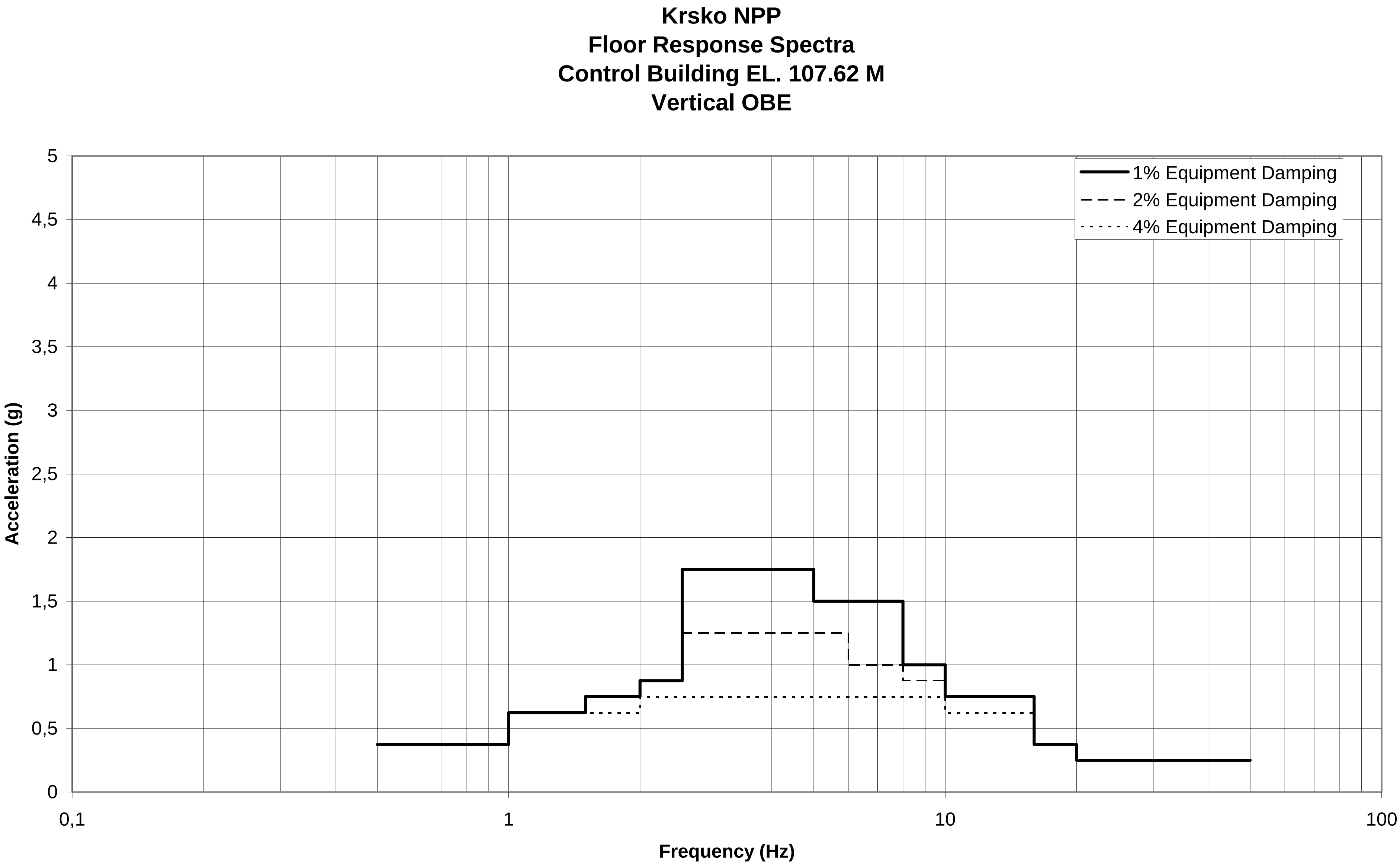

Krsko NPP
Floor Response Spectra
Control Building EL. 107.62 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A74

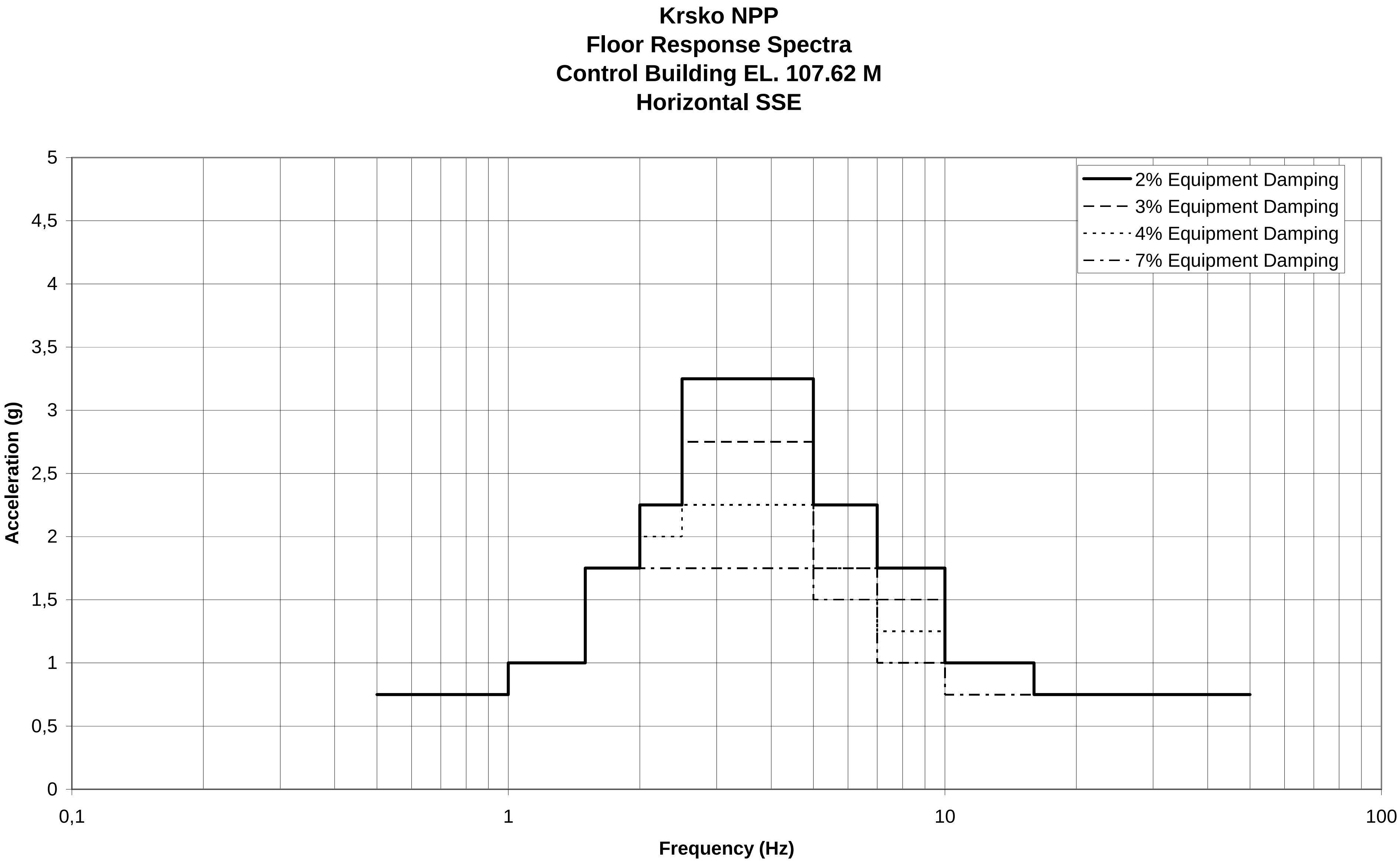

Krsko NPP
Floor Response Spectra
Control Building EL. 107.62 M
Horizontal SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A75

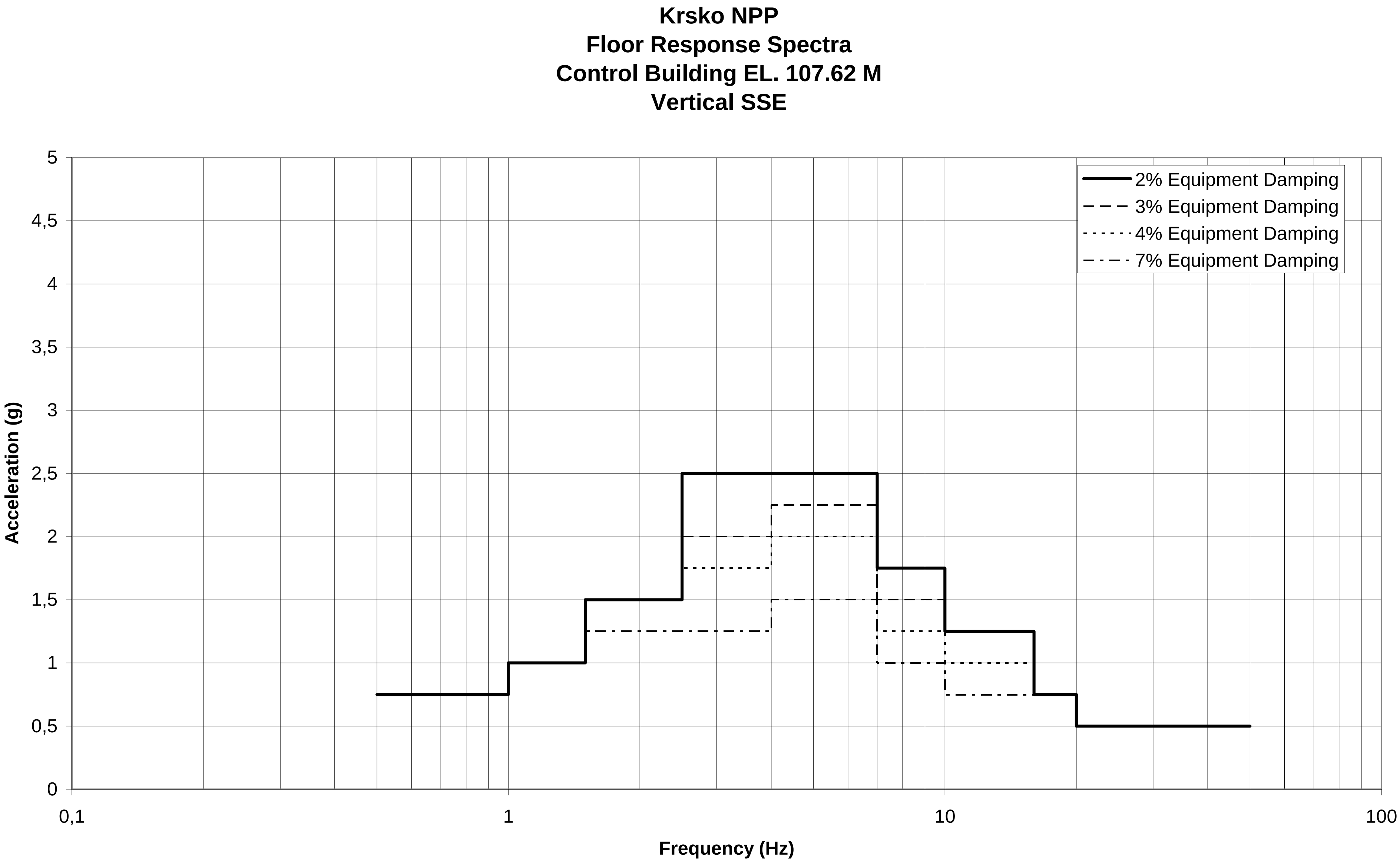
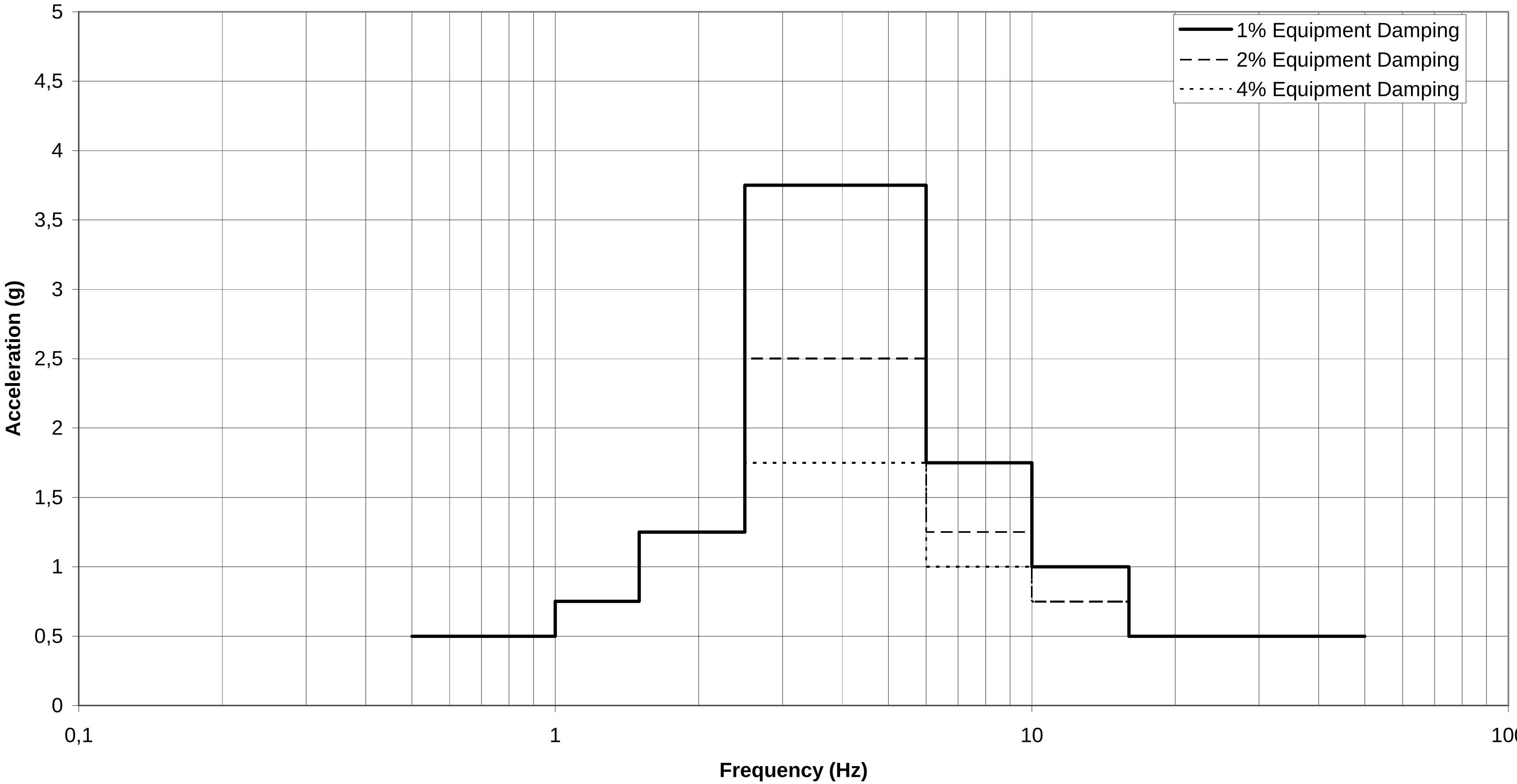
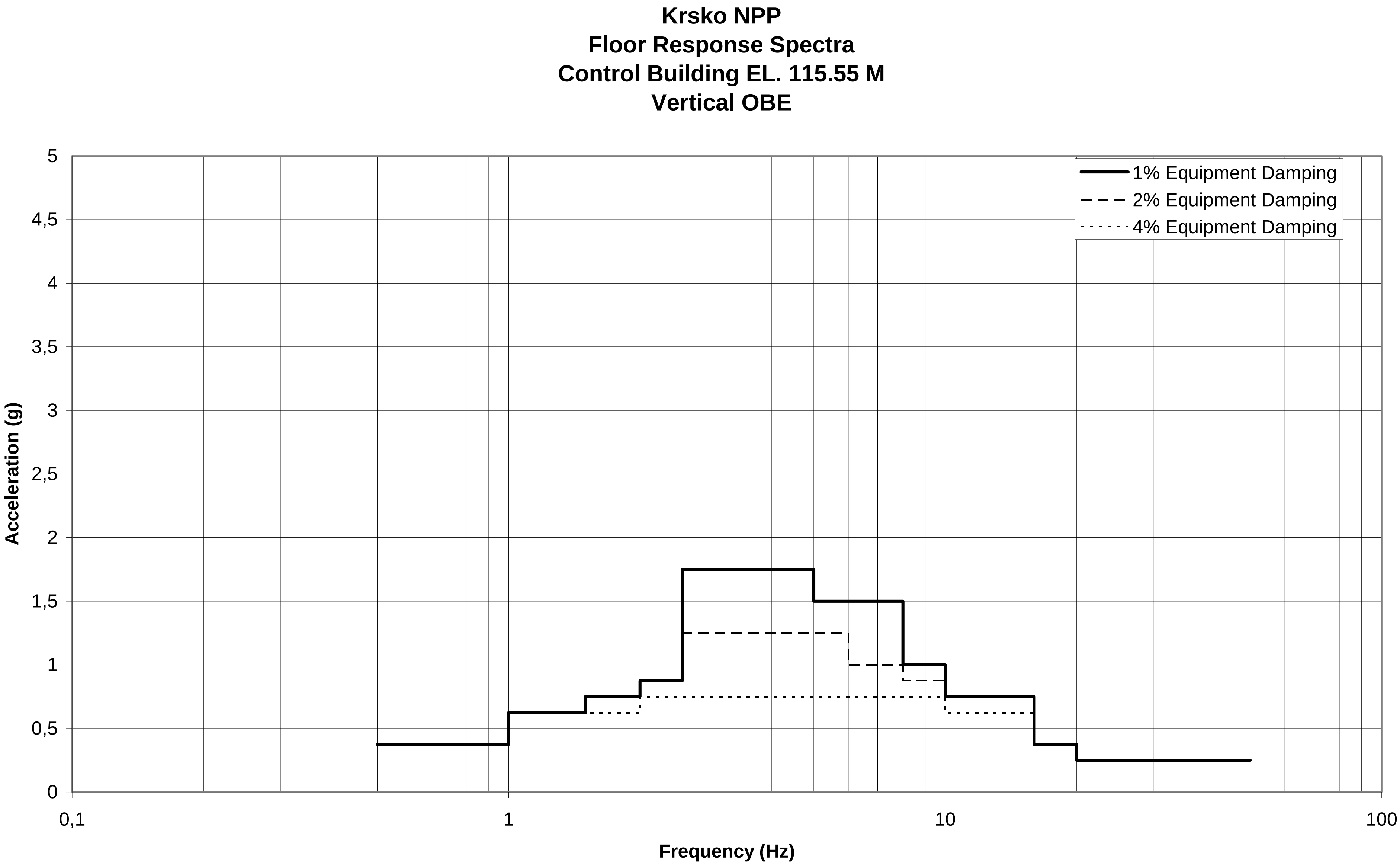

Krsko NPP
Floor Response Spectra
Control Building EL. 107.62 M
Vertical SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A76

Krsko NPP
Floor Response Spectra
Control Building EL. 115.55 M
Horizontal OBE




Krsko NPP
Floor Response Spectra
Control Building EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

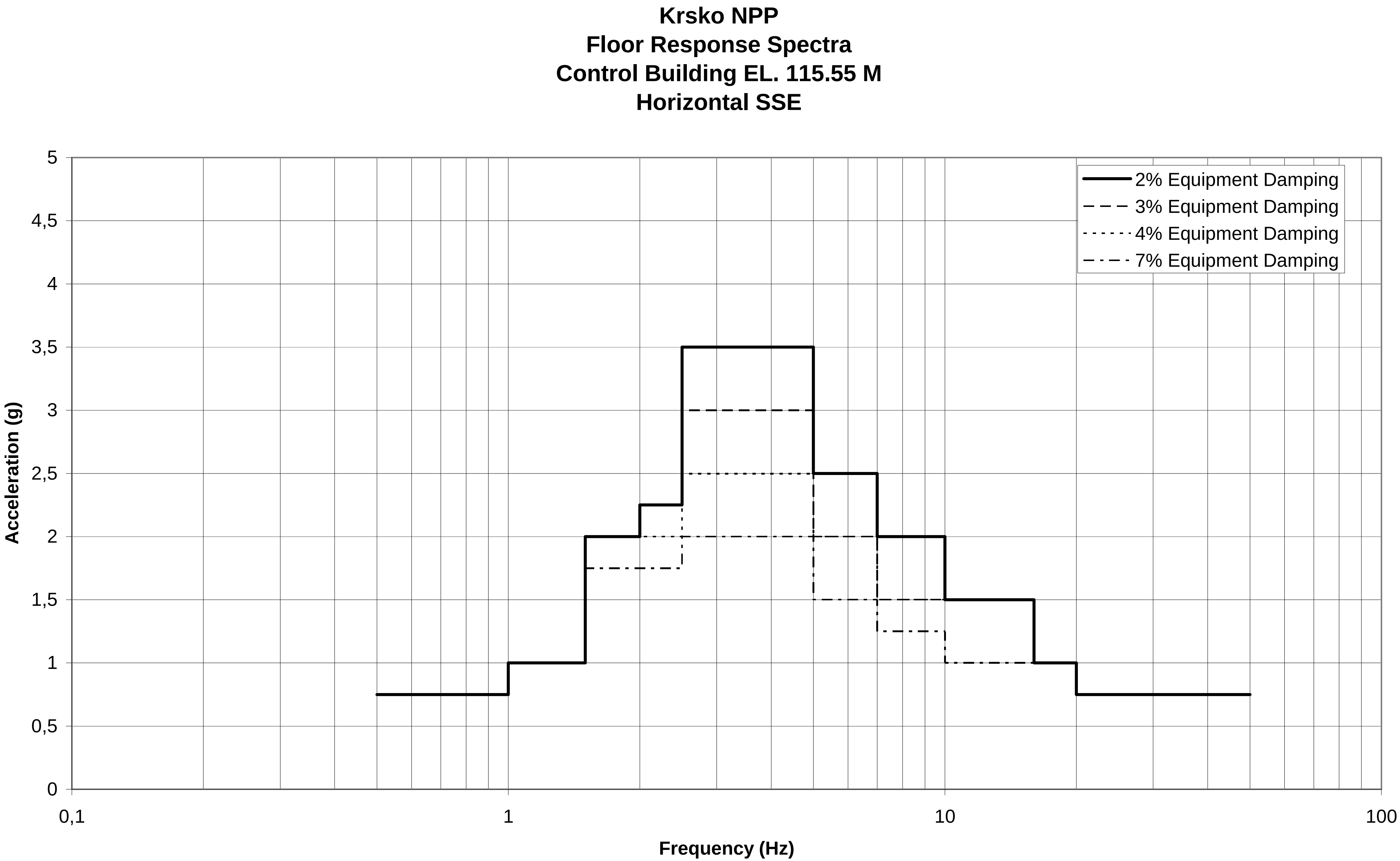
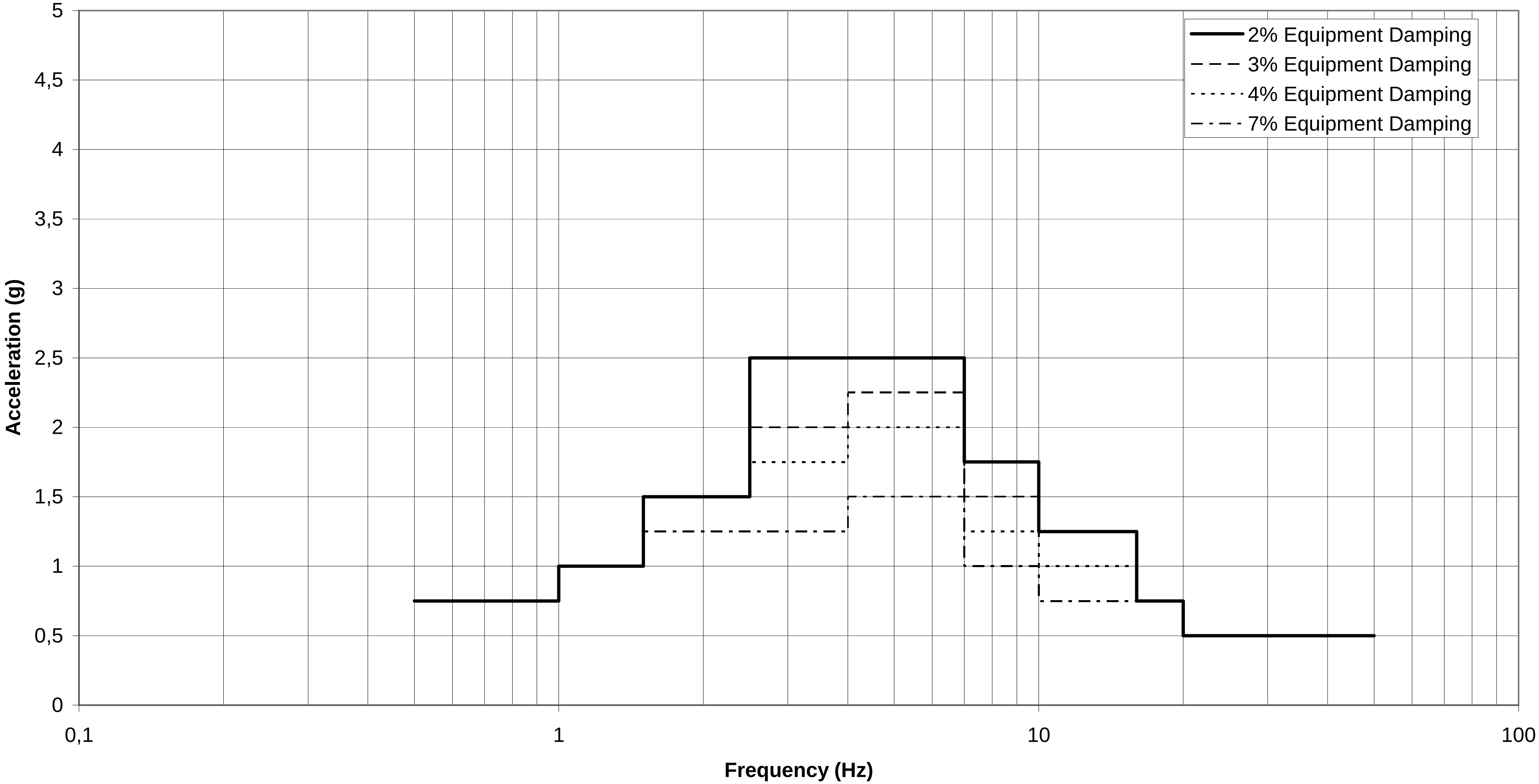

Krsko NPP
Floor Response Spectra
Control Building EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A79

Krsko NPP
Floor Response Spectra
Control Building EL. 115.55 M
Vertical SSE



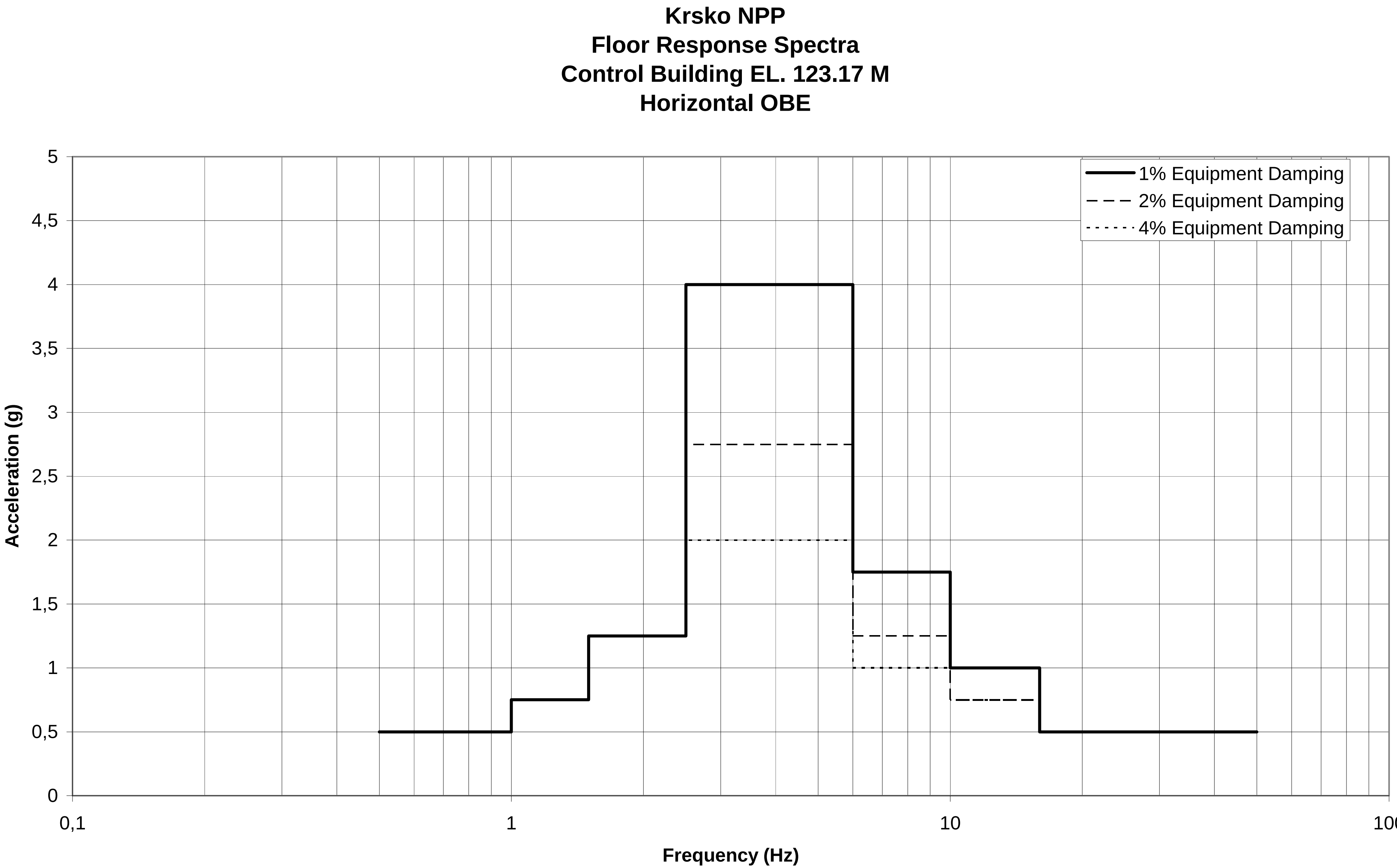
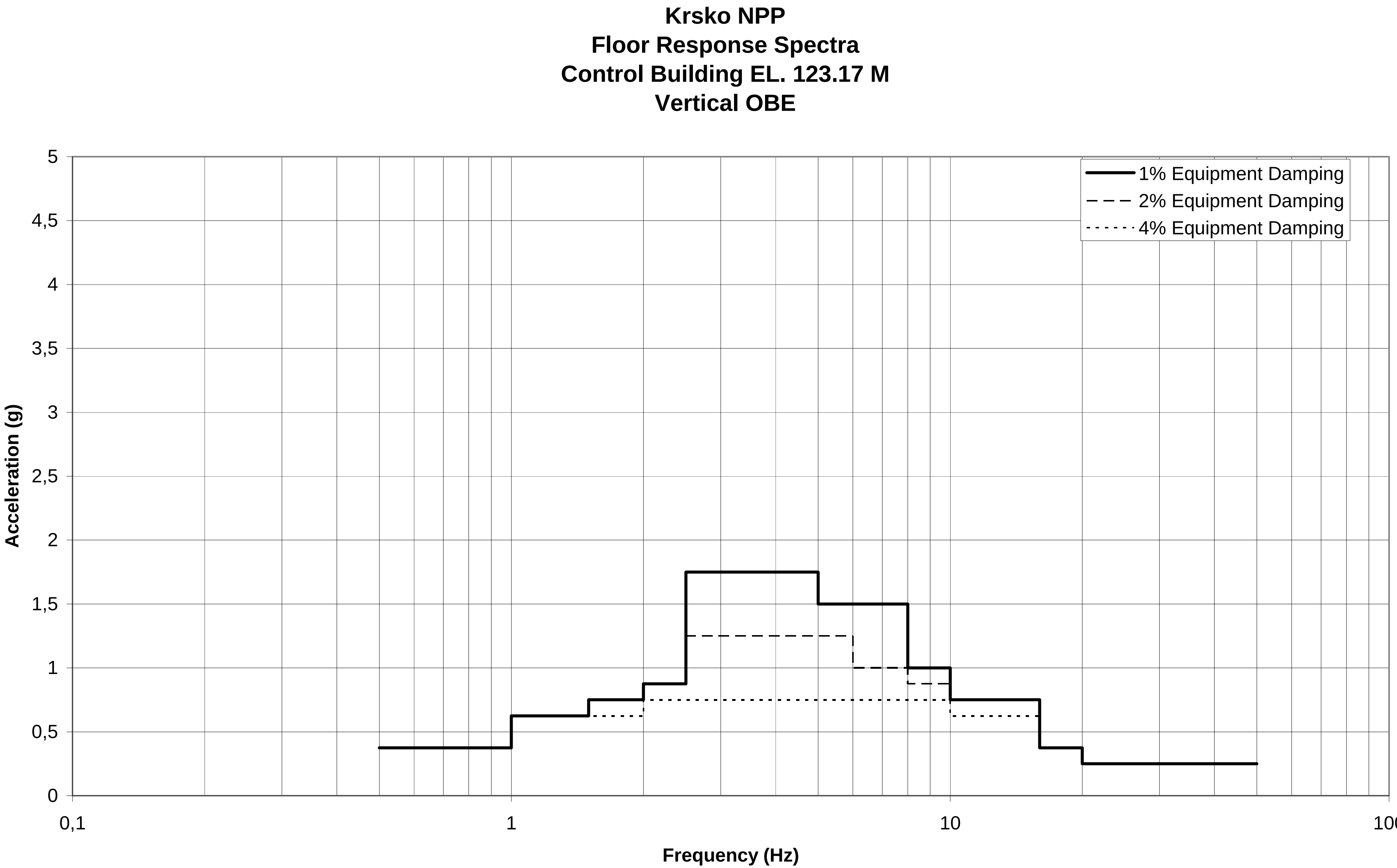

Krsko NPP
Floor Response Spectra
Control Building EL. 123.17 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A81


Krsko NPP
Floor Response Spectra
Control Building EL. 123.17 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

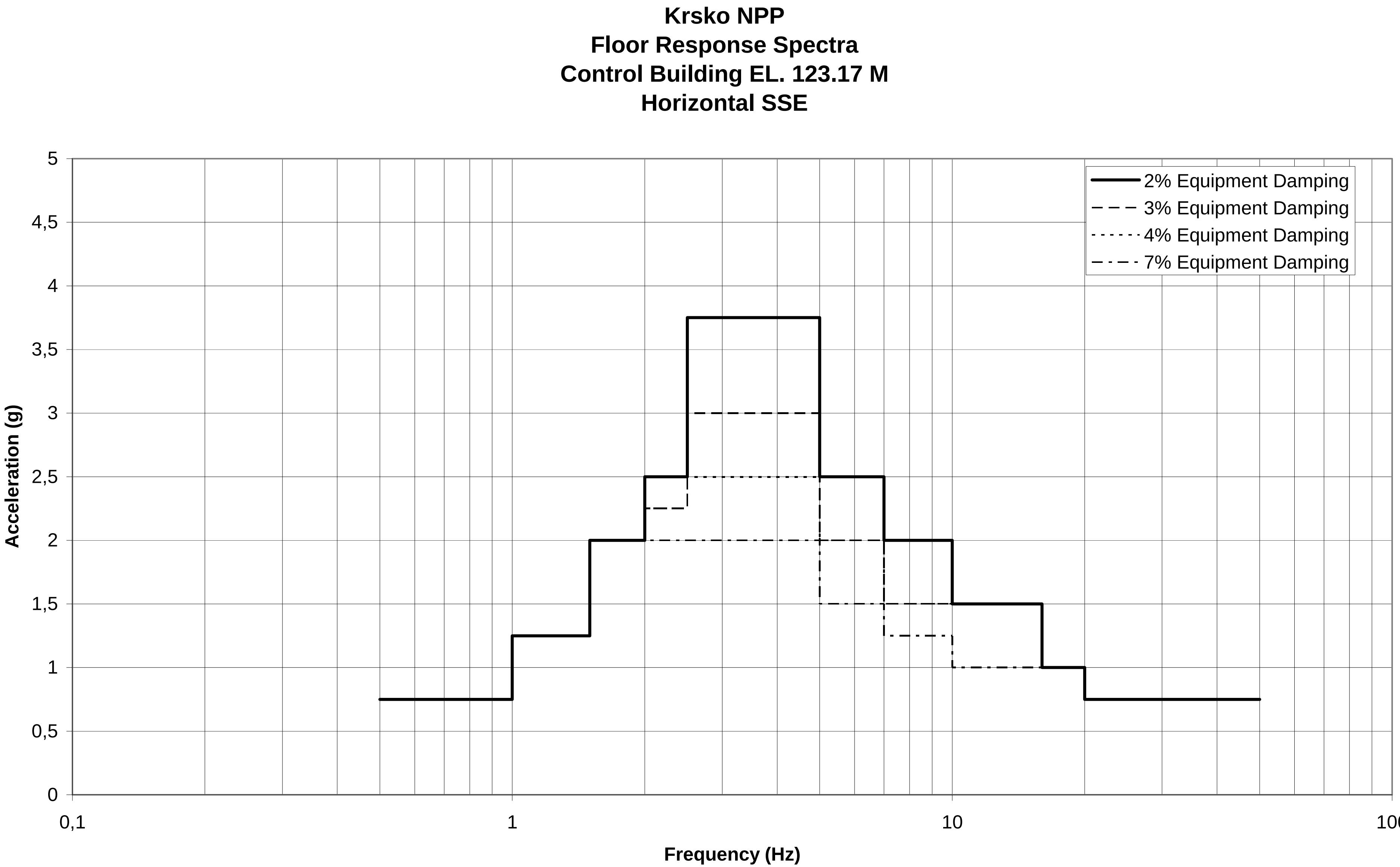
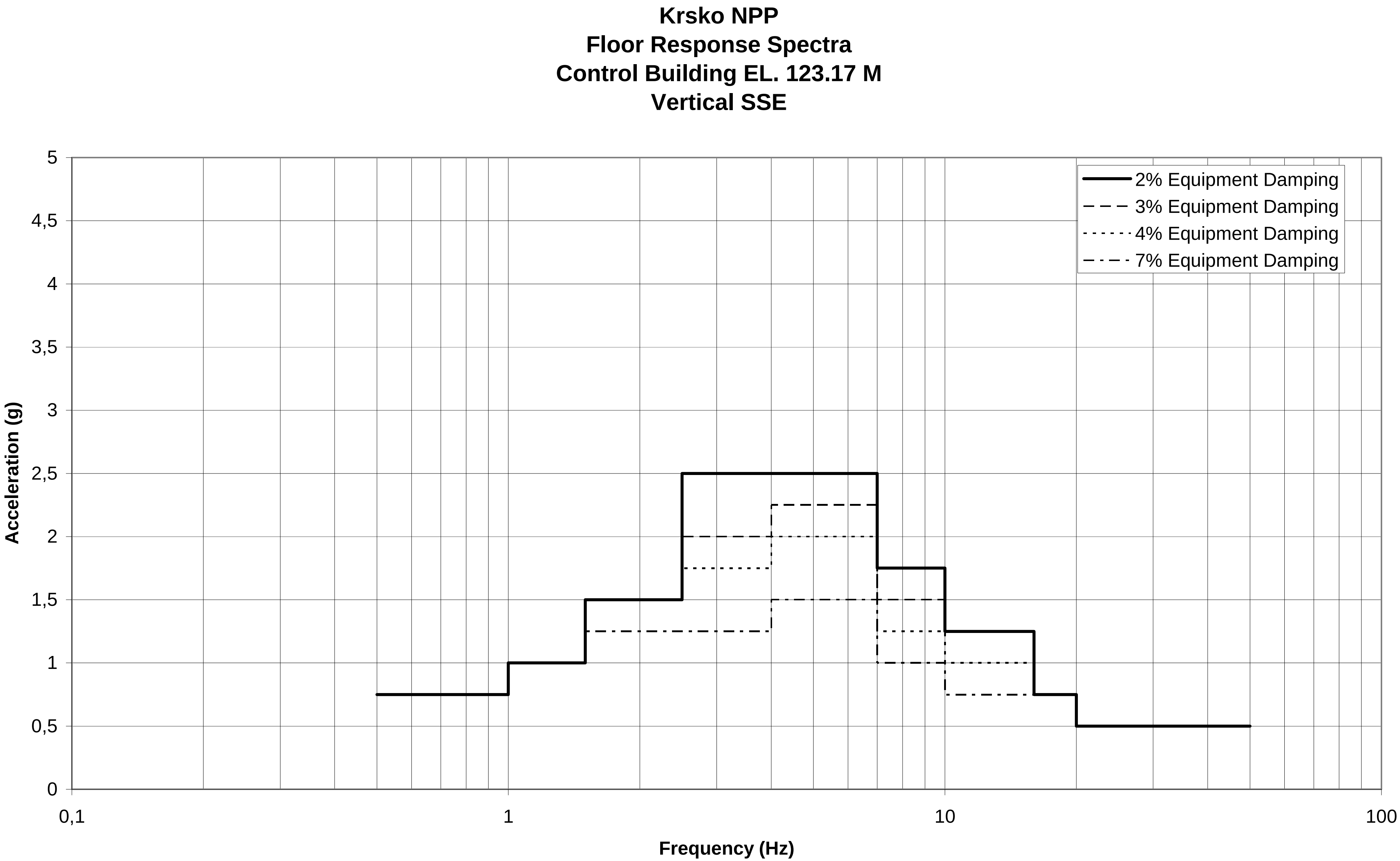

Krsko NPP
Floor Response Spectra
Control Building EL. 123.17 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A83


Krsko NPP
Floor Response Spectra
Control Building EL. 123.17 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 100.3 M
Horizontal OBE,

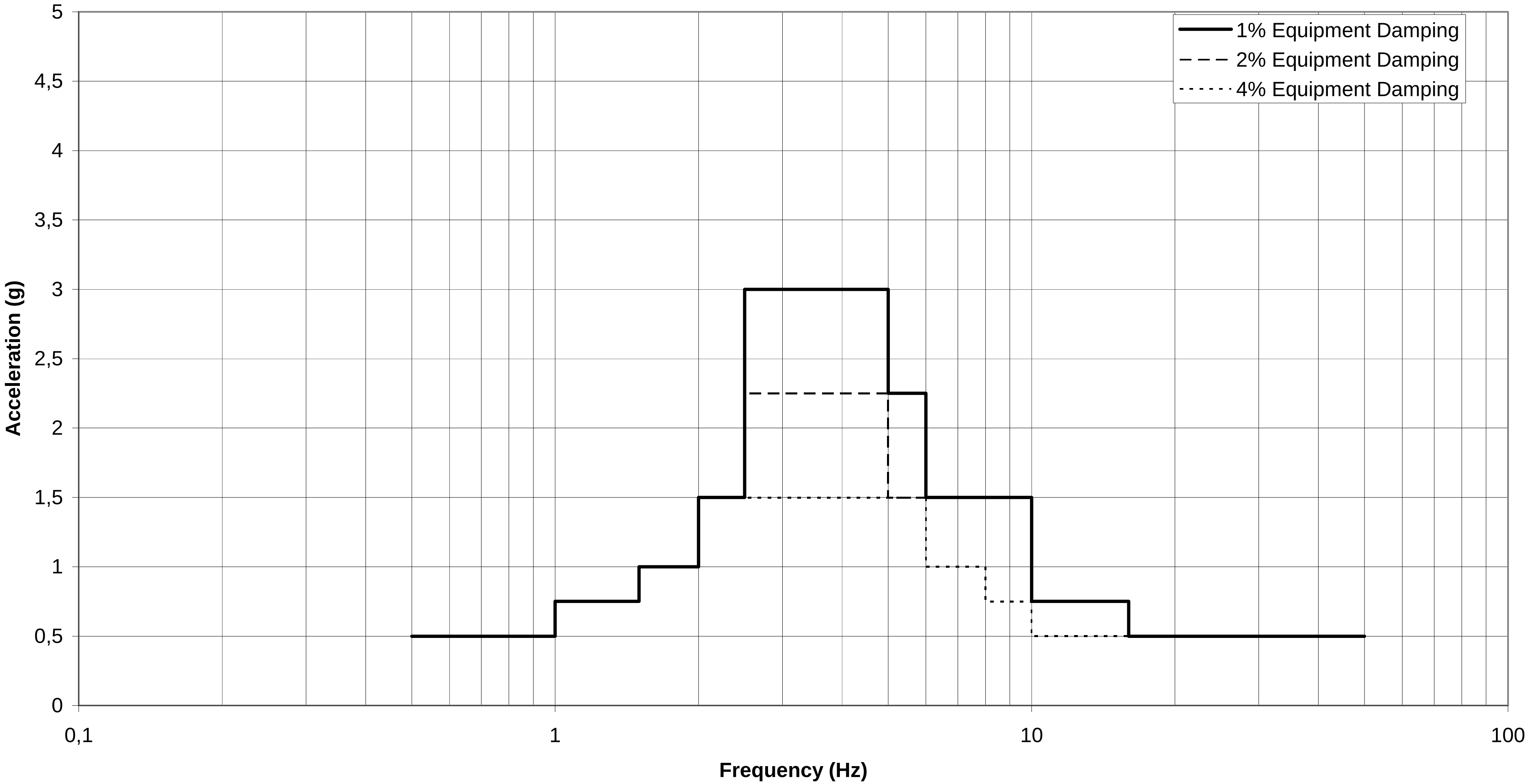


Figure A85

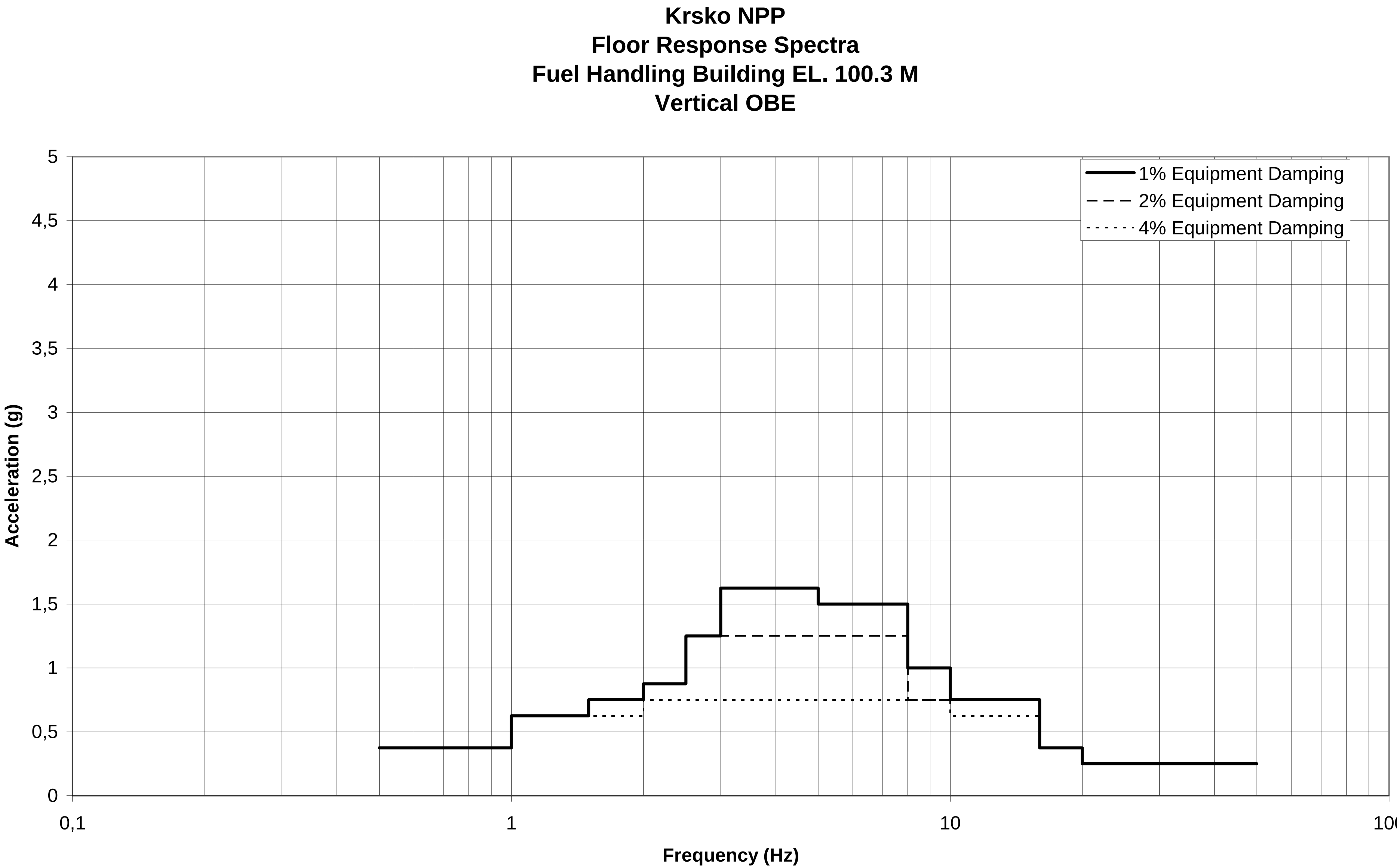

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 100.3 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A86

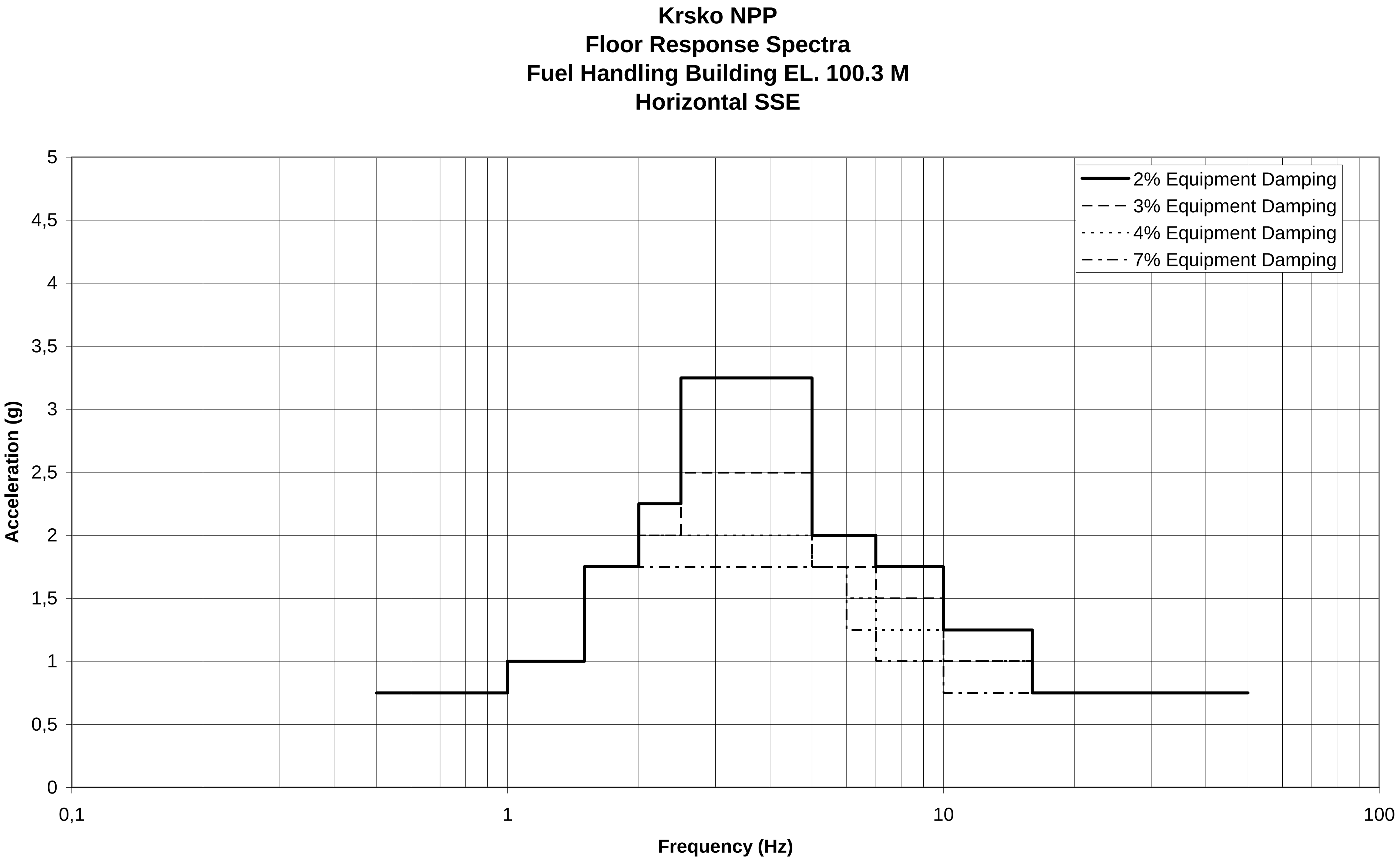

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A87

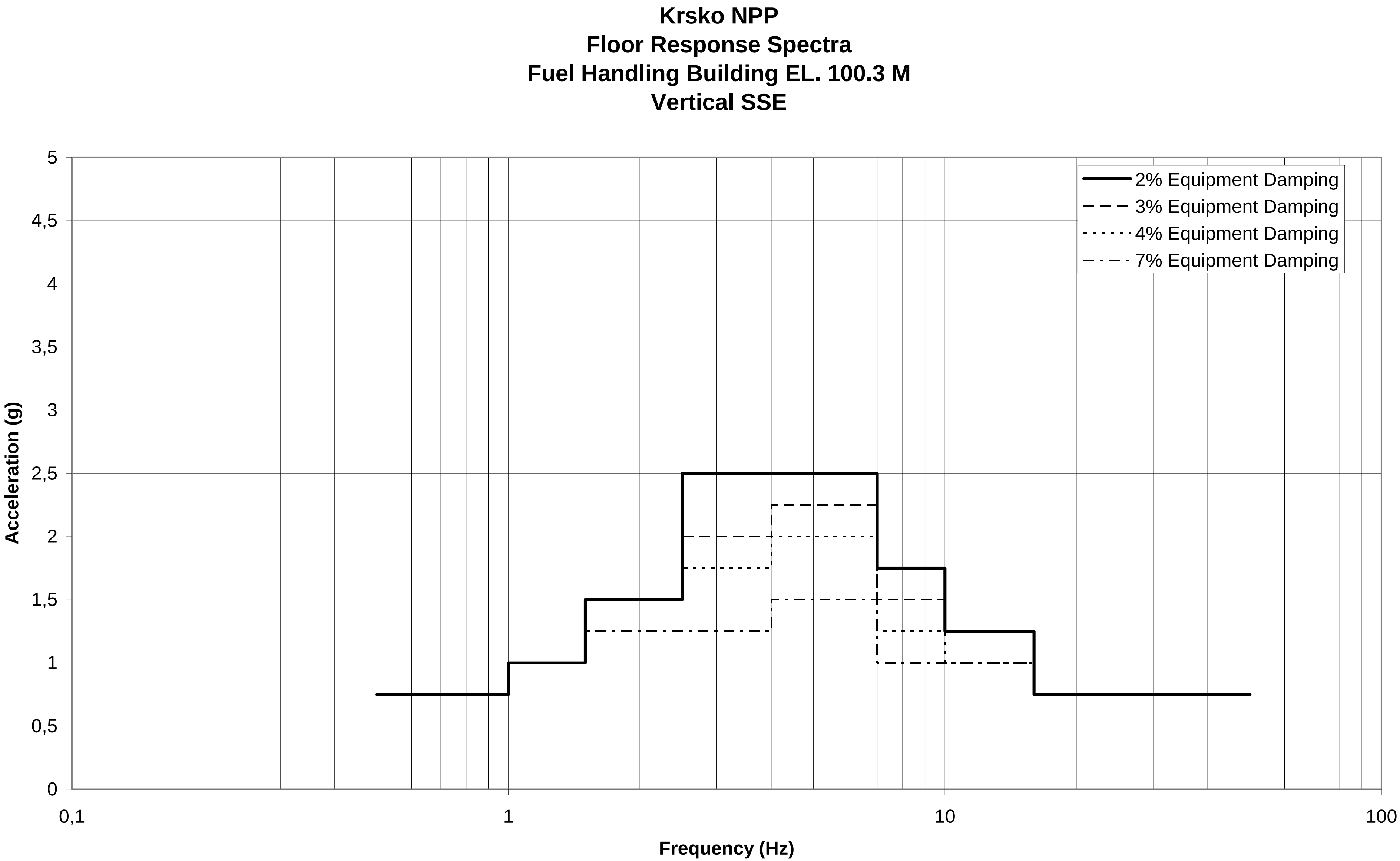

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 100.3 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A88

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 107.62 M
Horizontal OBE

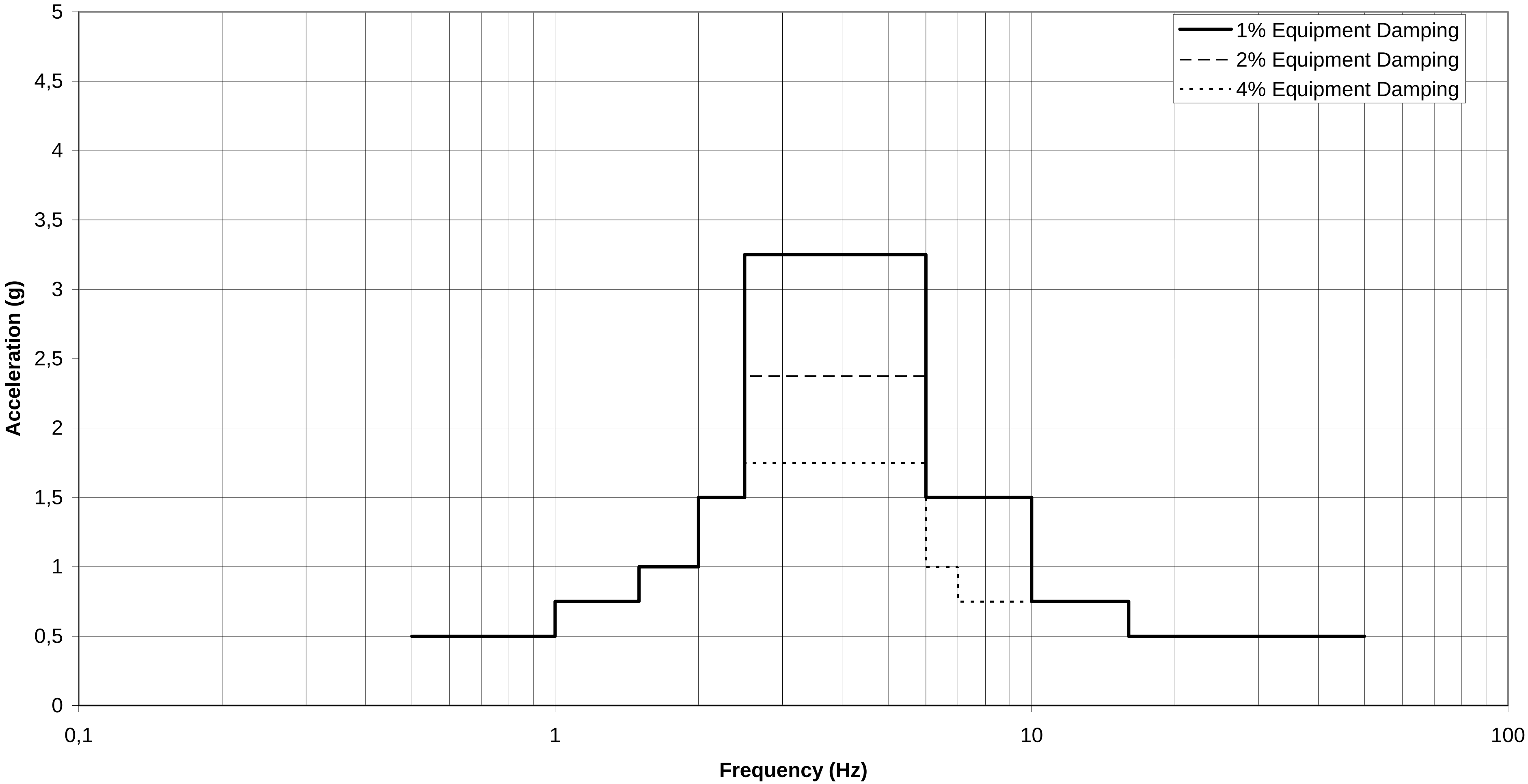


Figure A89

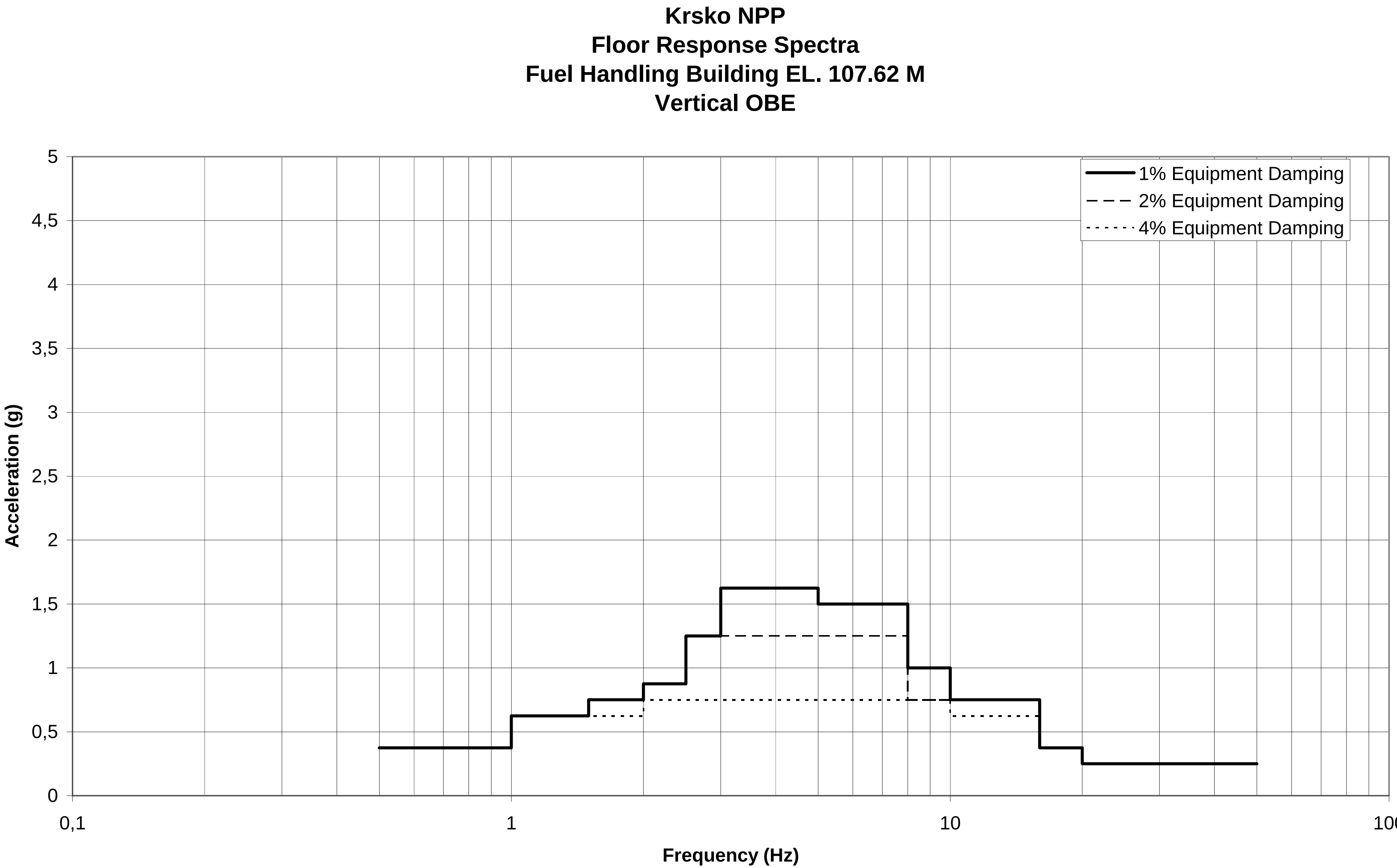

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 107.62 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A90

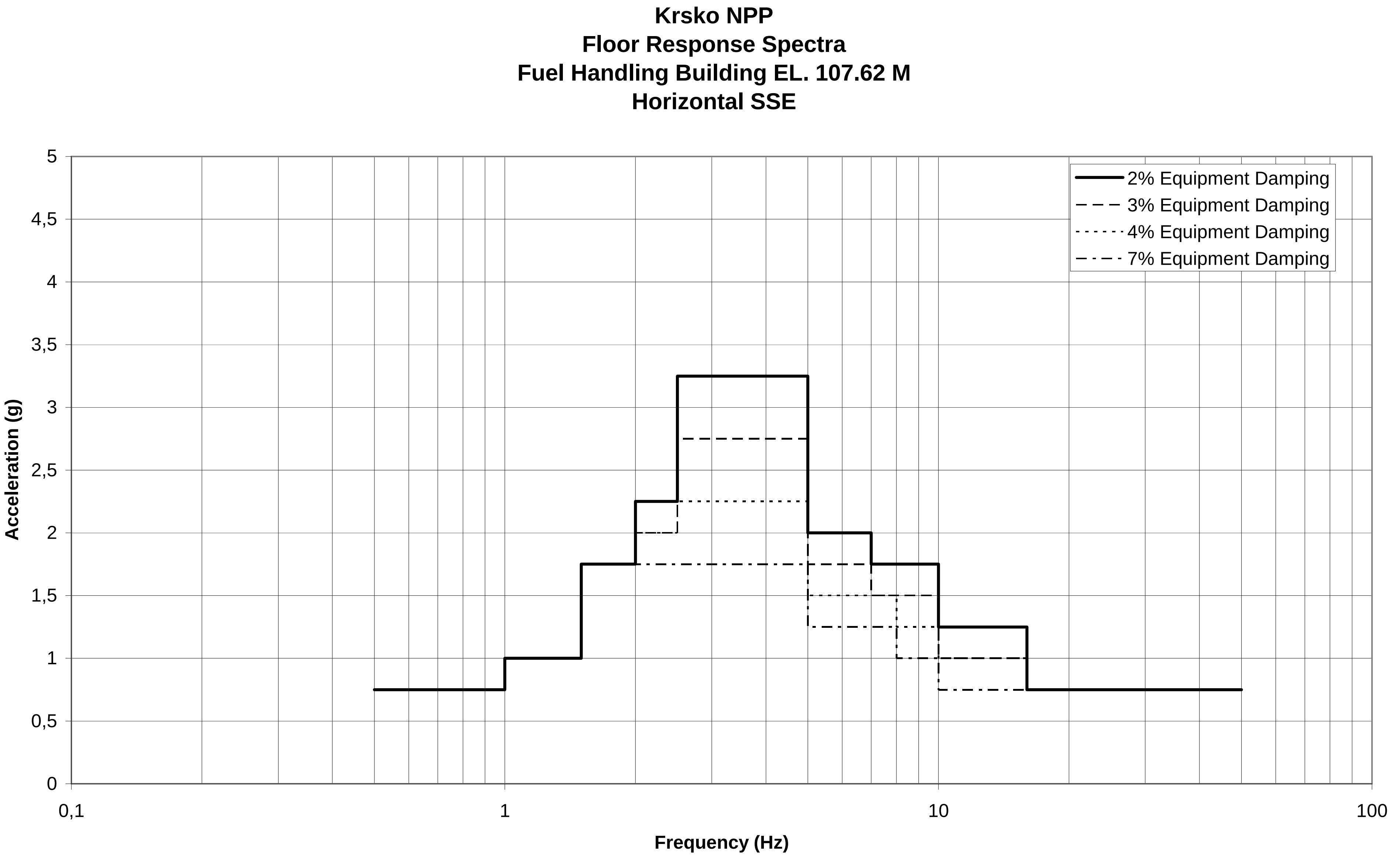
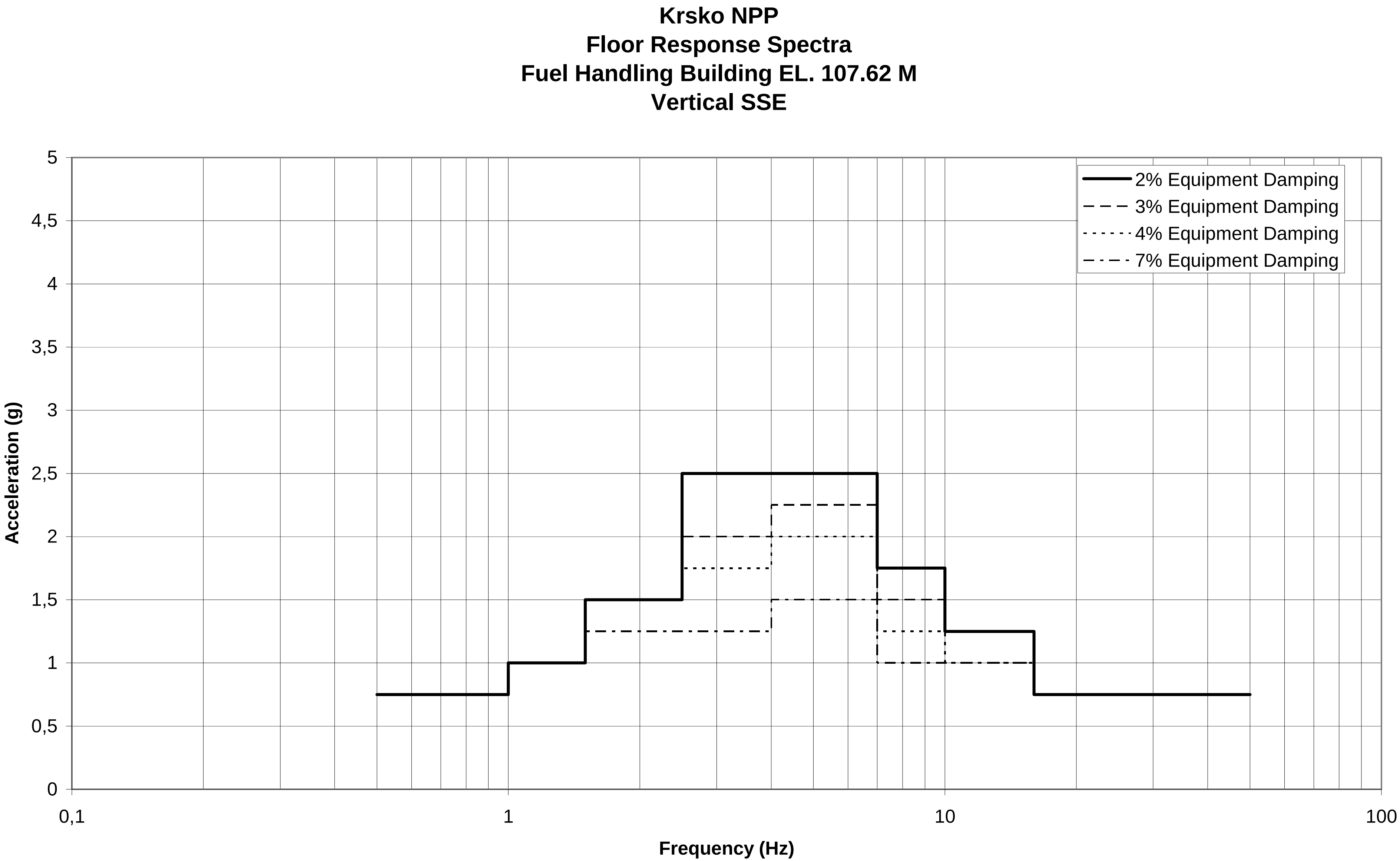

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 107.62 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A91


Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 107.62 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

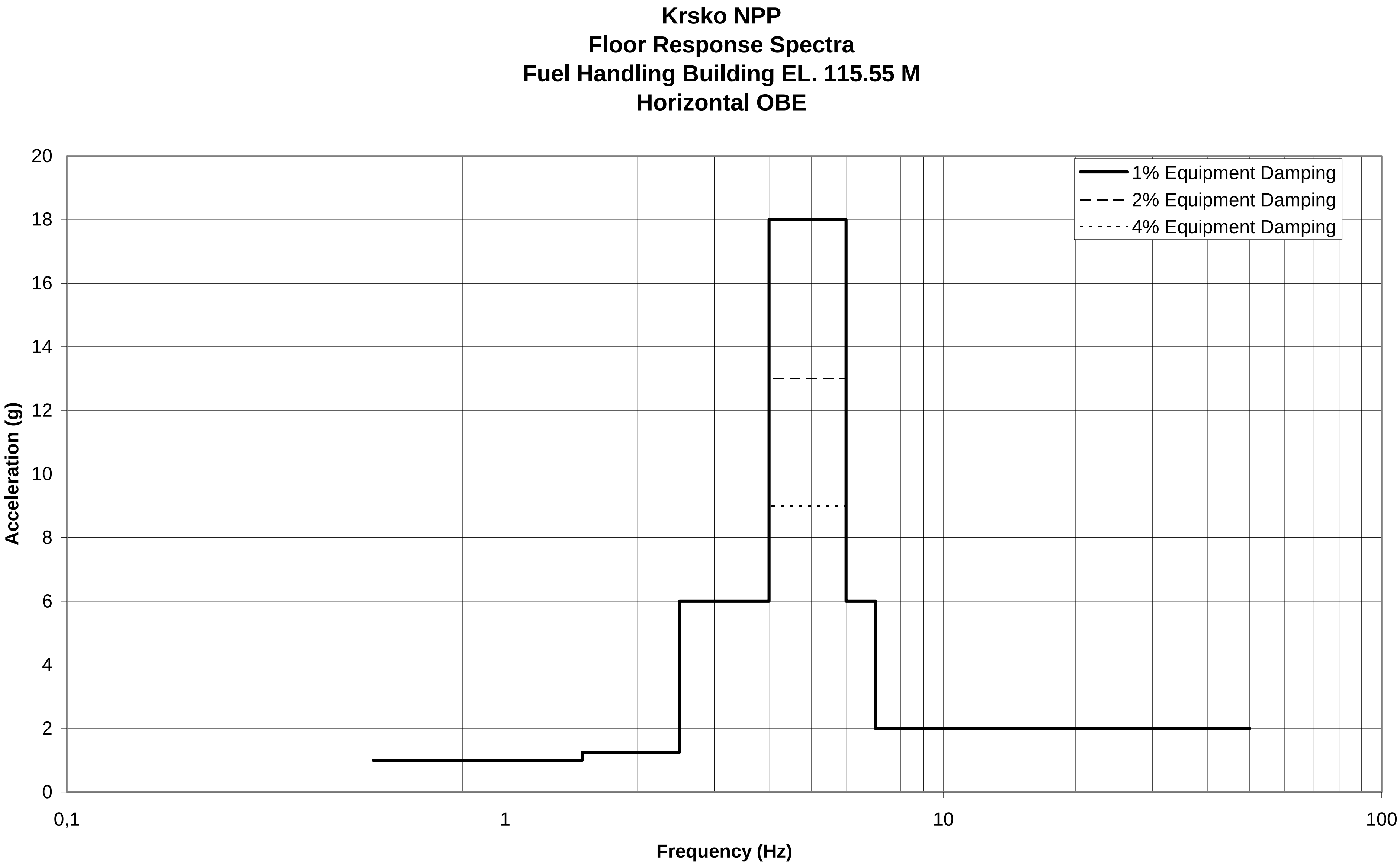

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 115.55 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
2
4
6
8
10
12
14
16
18
20
0,1
1
10
100
Frequency (Hz)

Figure A93

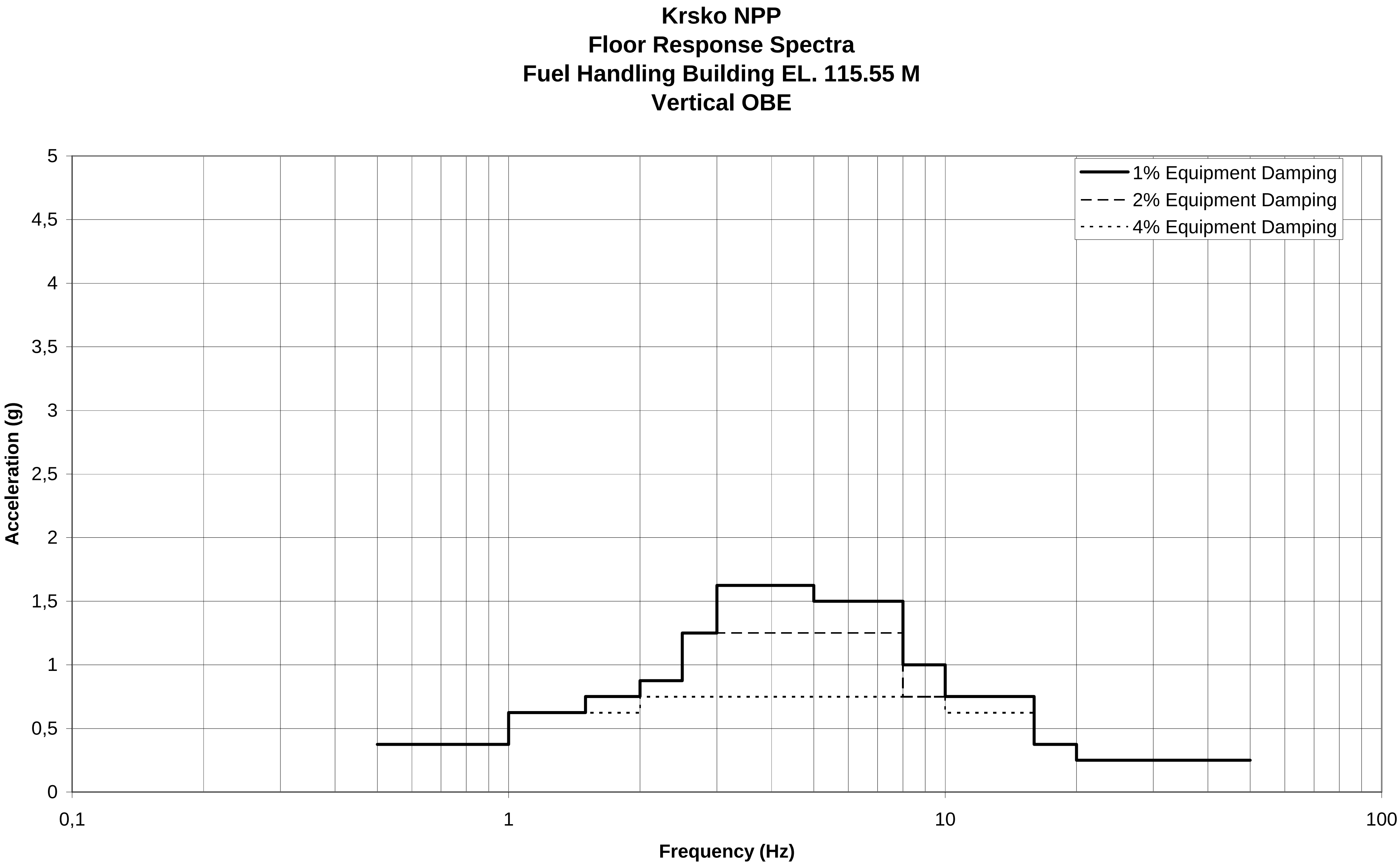

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A94

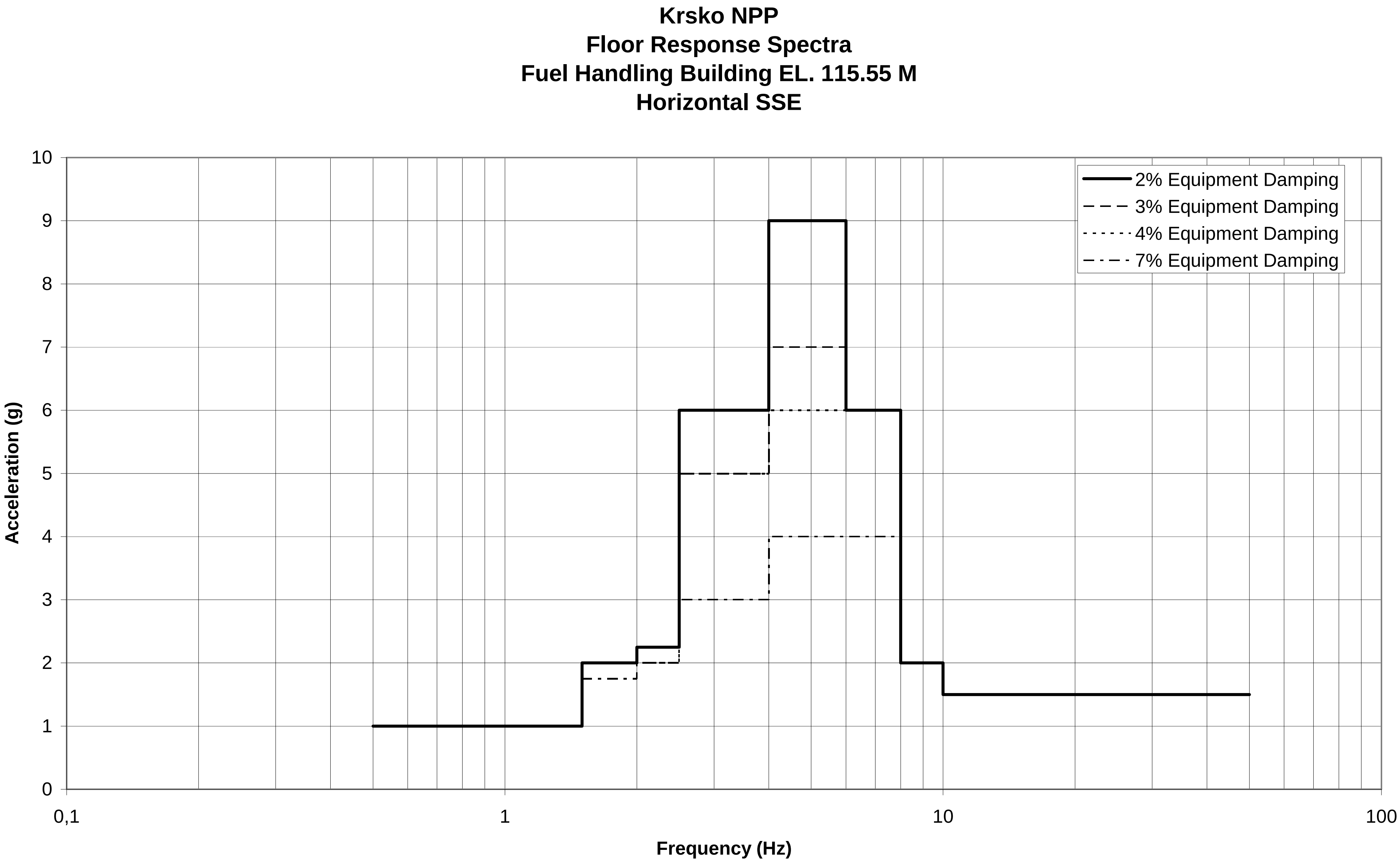
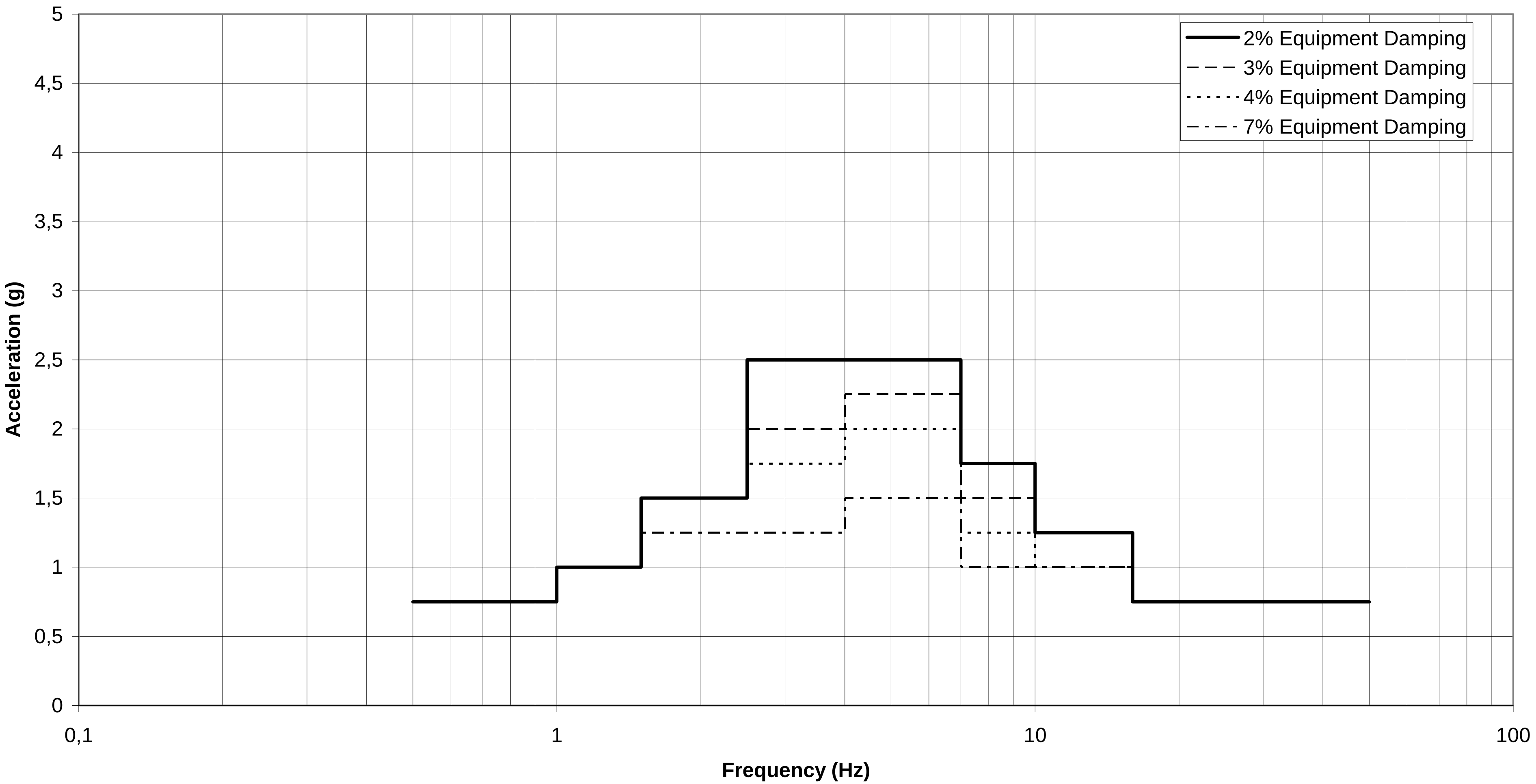
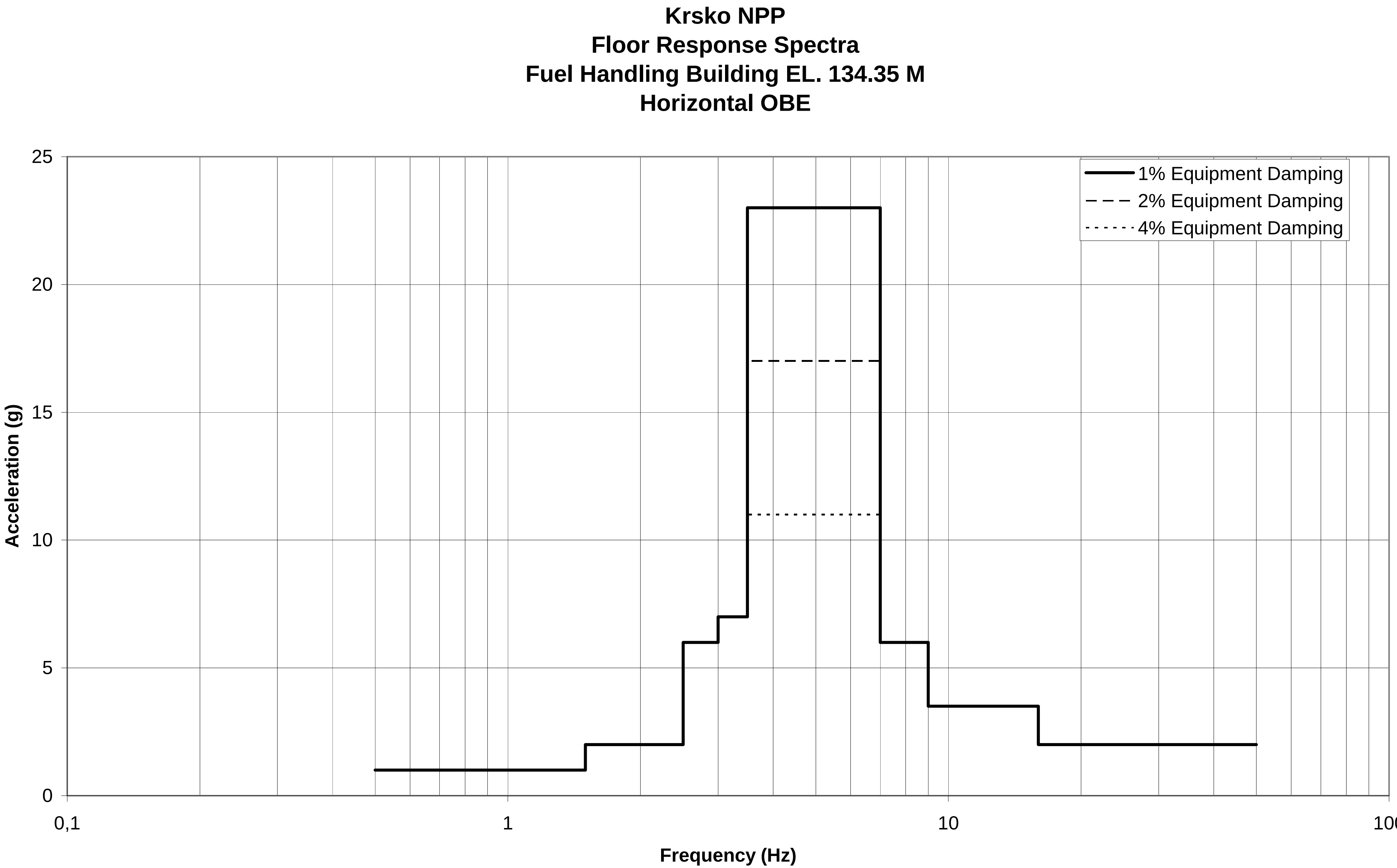

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
9
10
0,1
1
10
100

Figure A95

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 115.55 M
Vertical SSE




Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 134.35 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
5
10
15
20
25
0,1
1
10
100

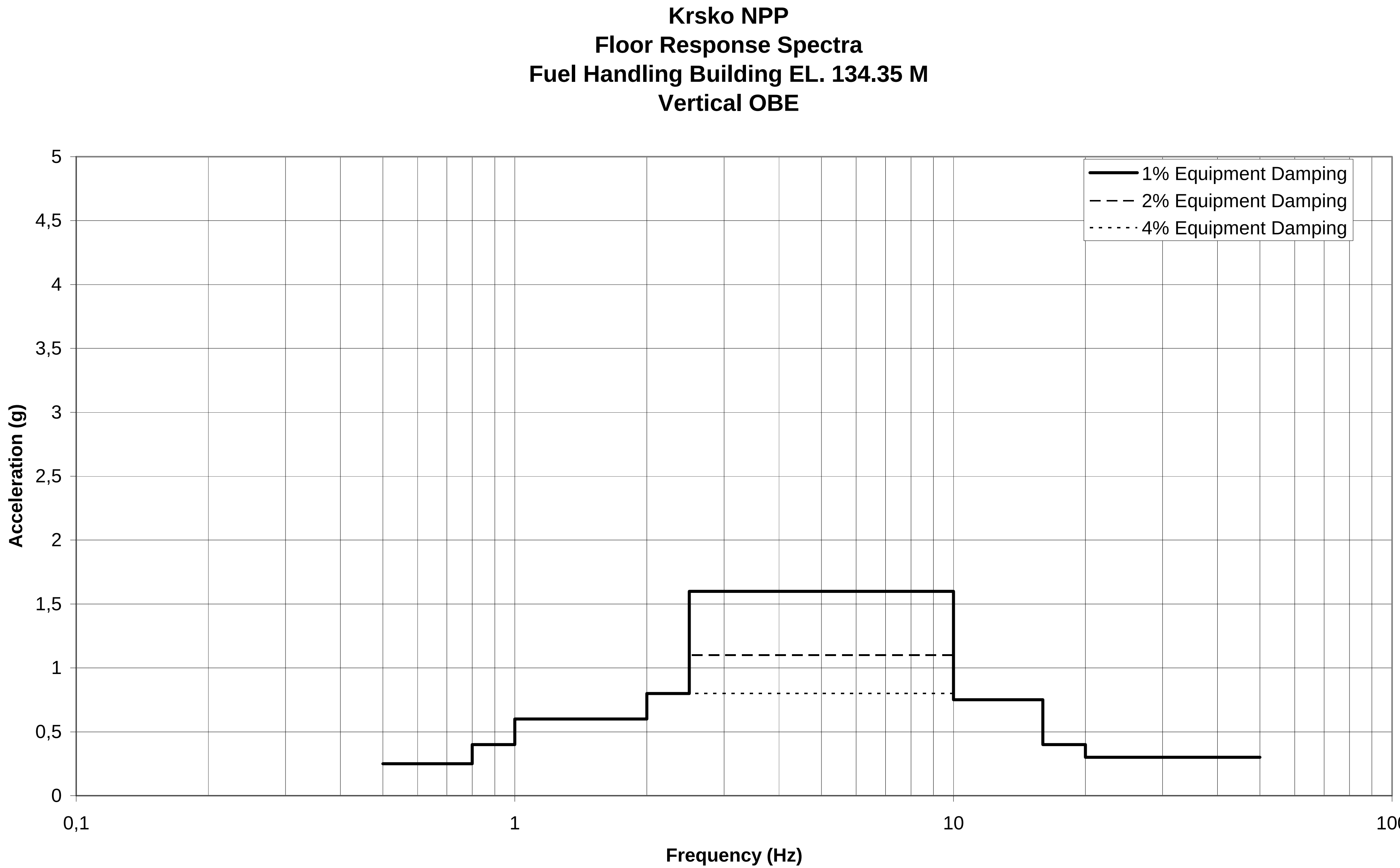
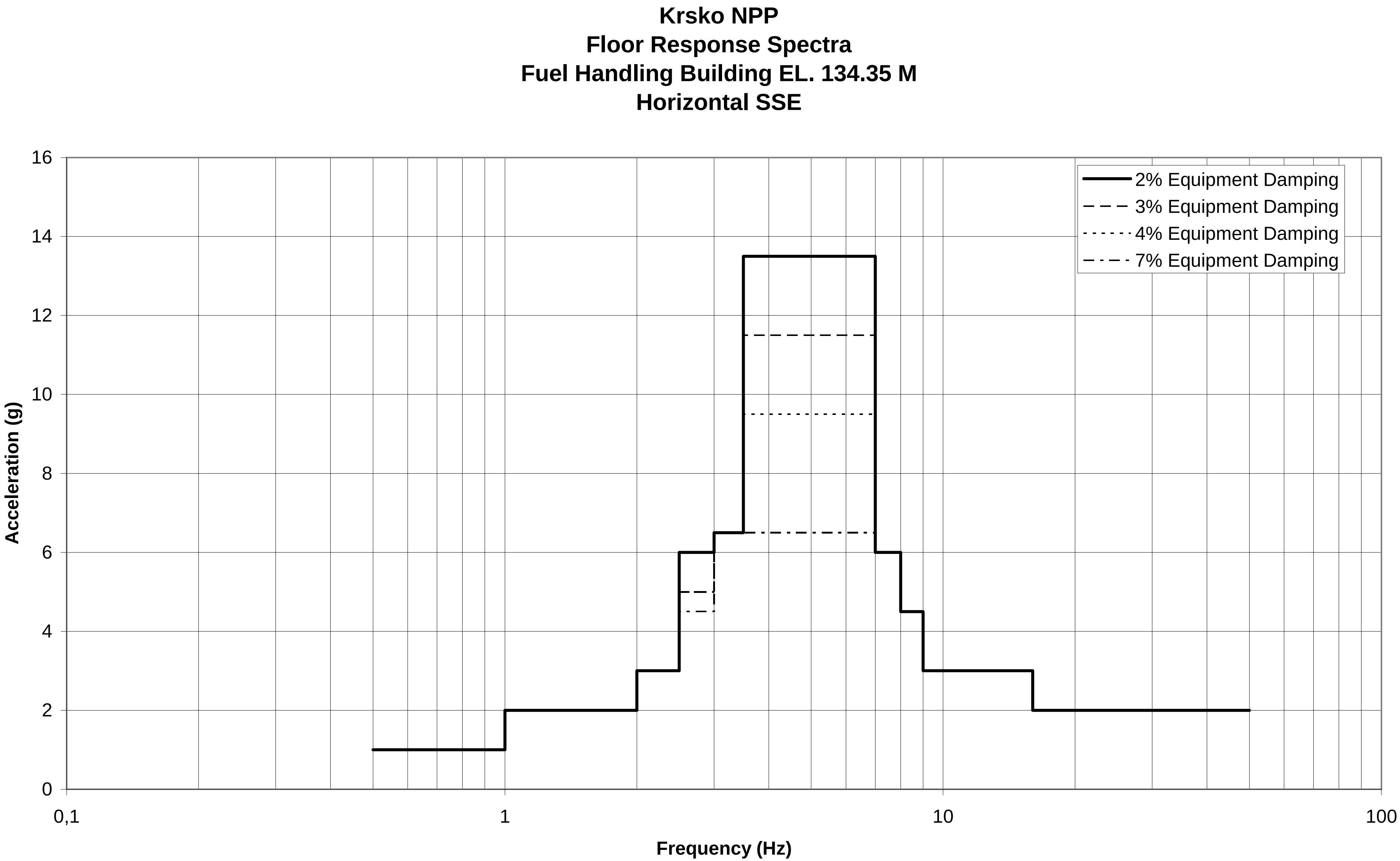

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 134.35 M
Vertical OBE
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
Frequency (Hz)
0,1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure A98


Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 134.35 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
2
4
6
8
10
12
14
16
0,1
1
10
100
Frequency (Hz)

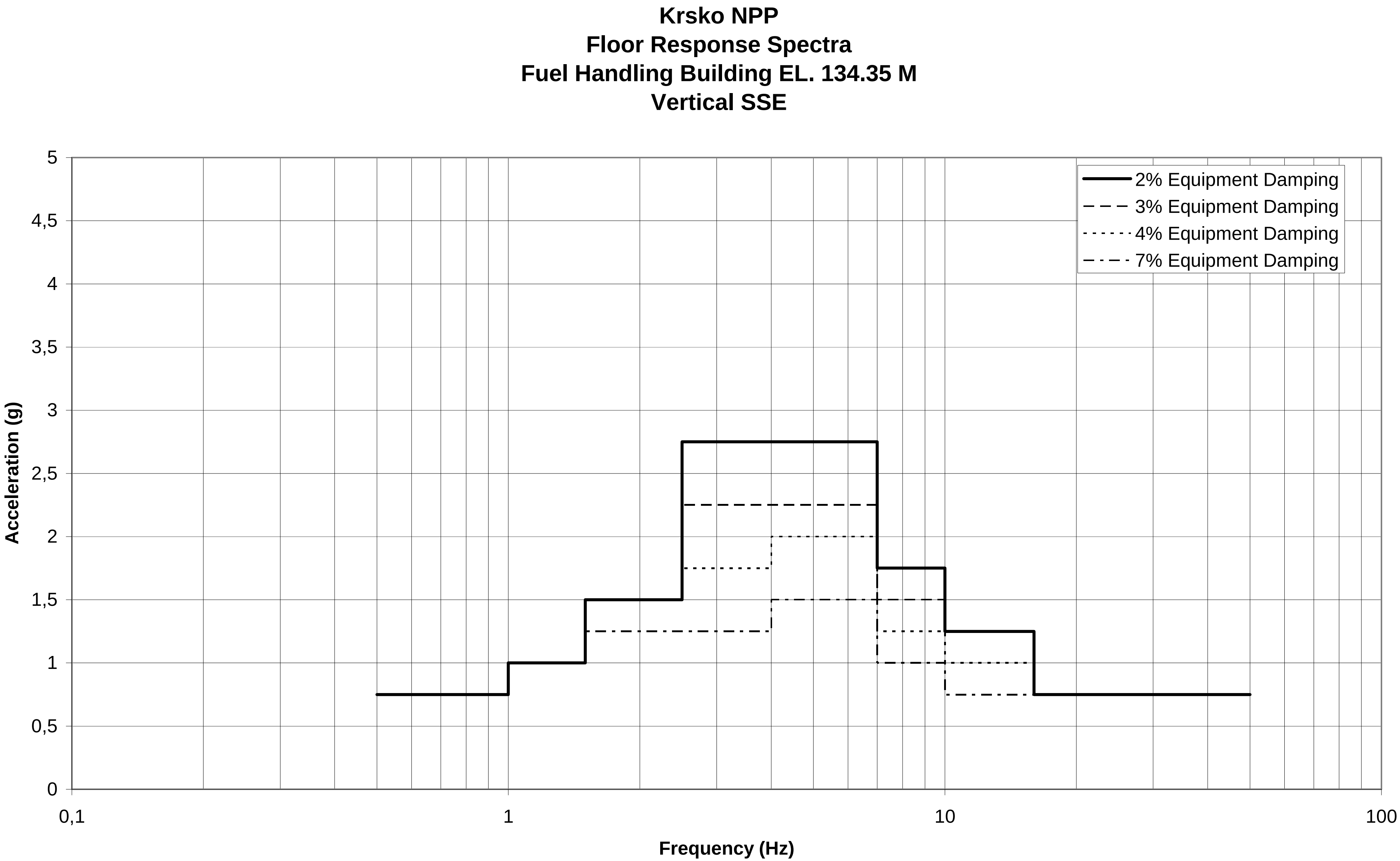
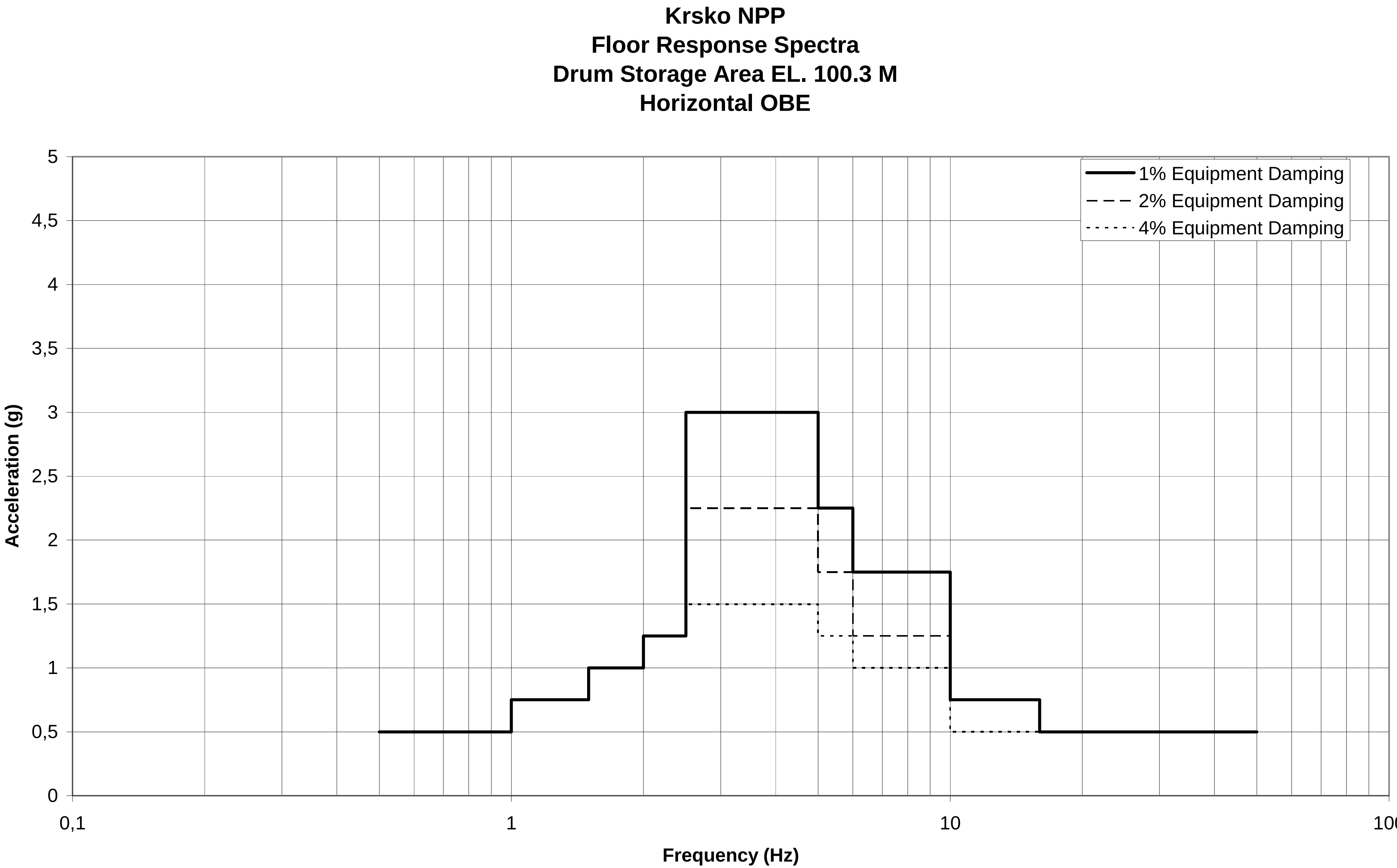

Krsko NPP
Floor Response Spectra
Fuel Handling Building EL. 134.35 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A100


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 100.3 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

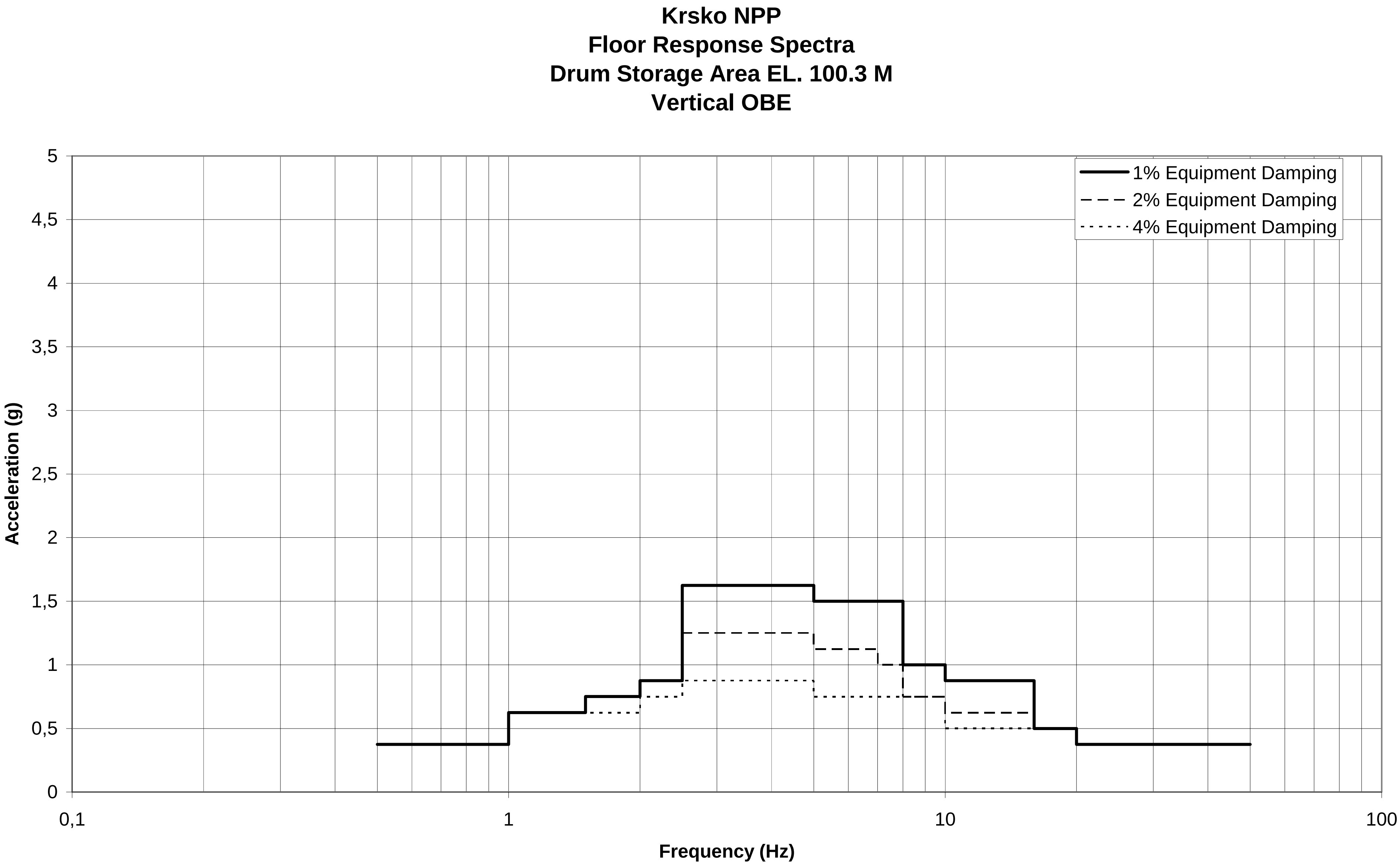

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 100.3 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)

Figure A102

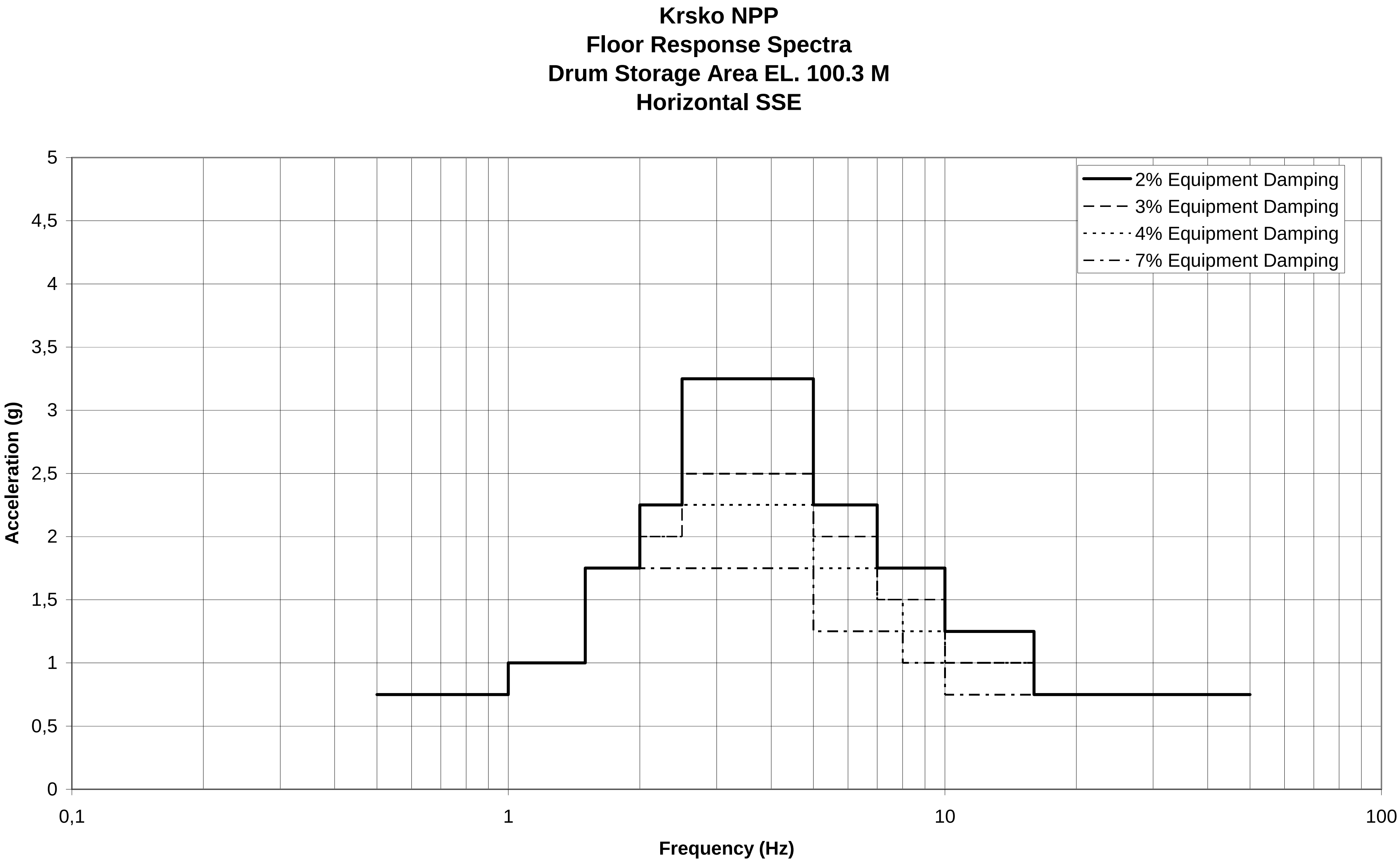
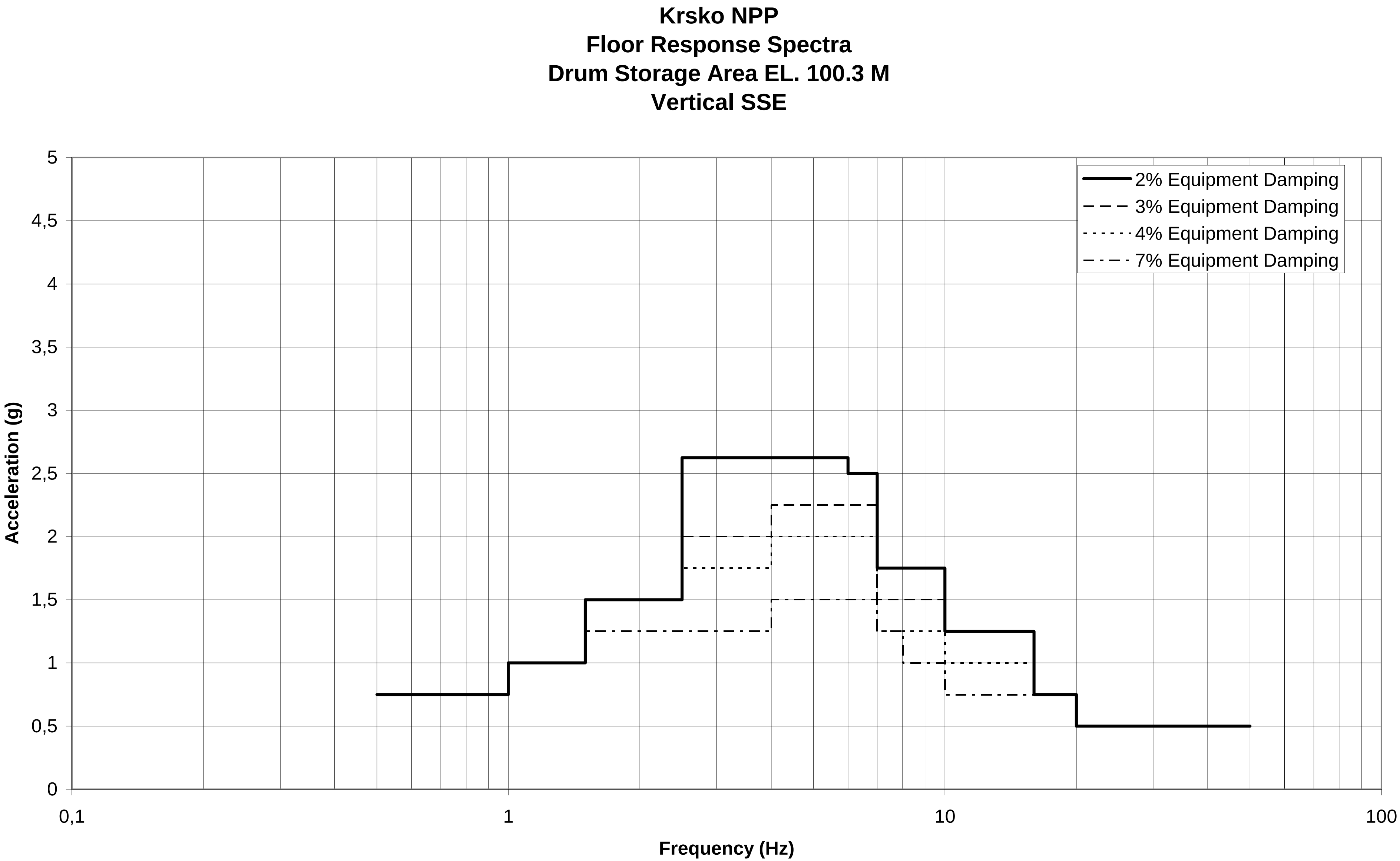

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 100.3 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A103


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 100.3 M
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

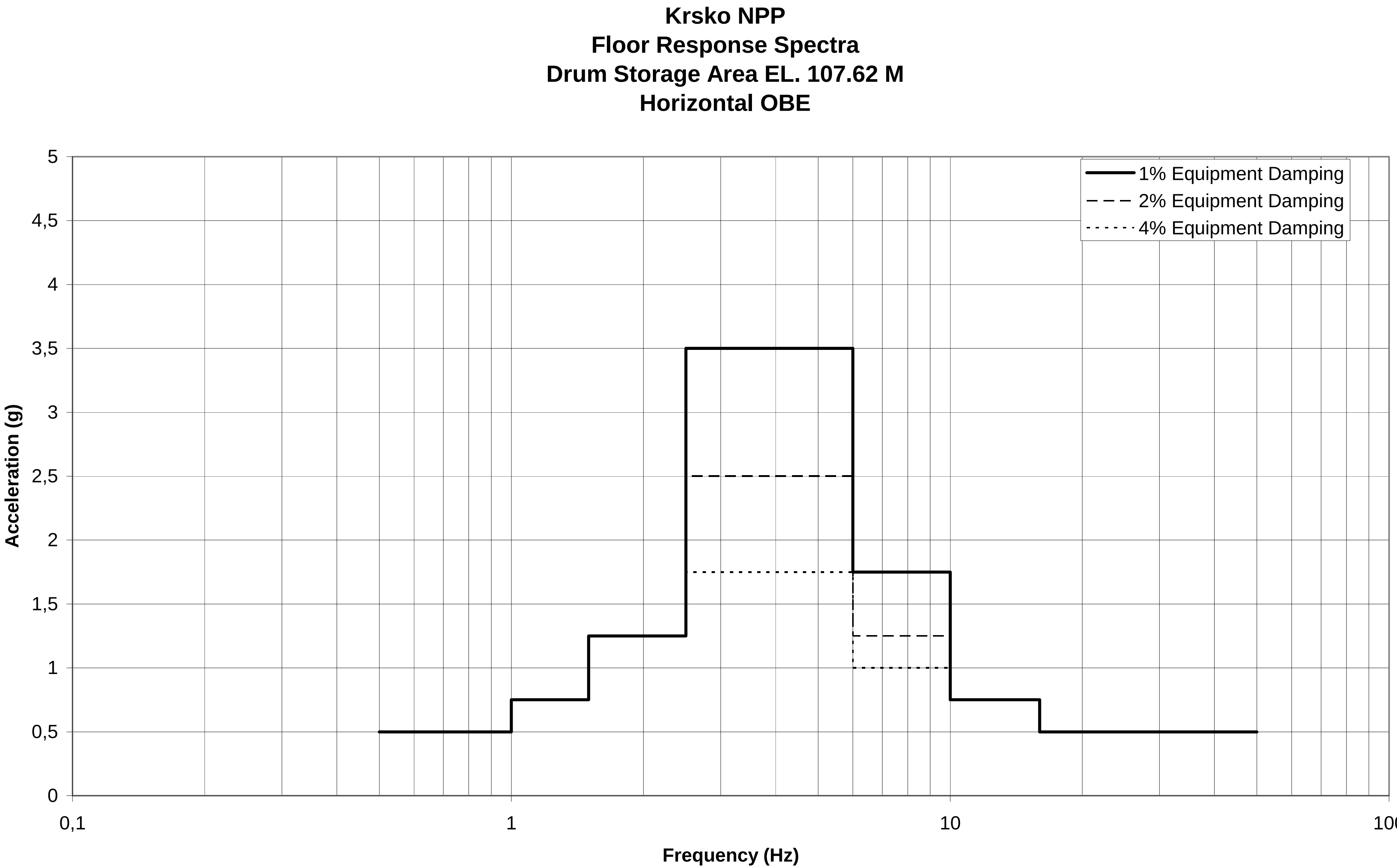
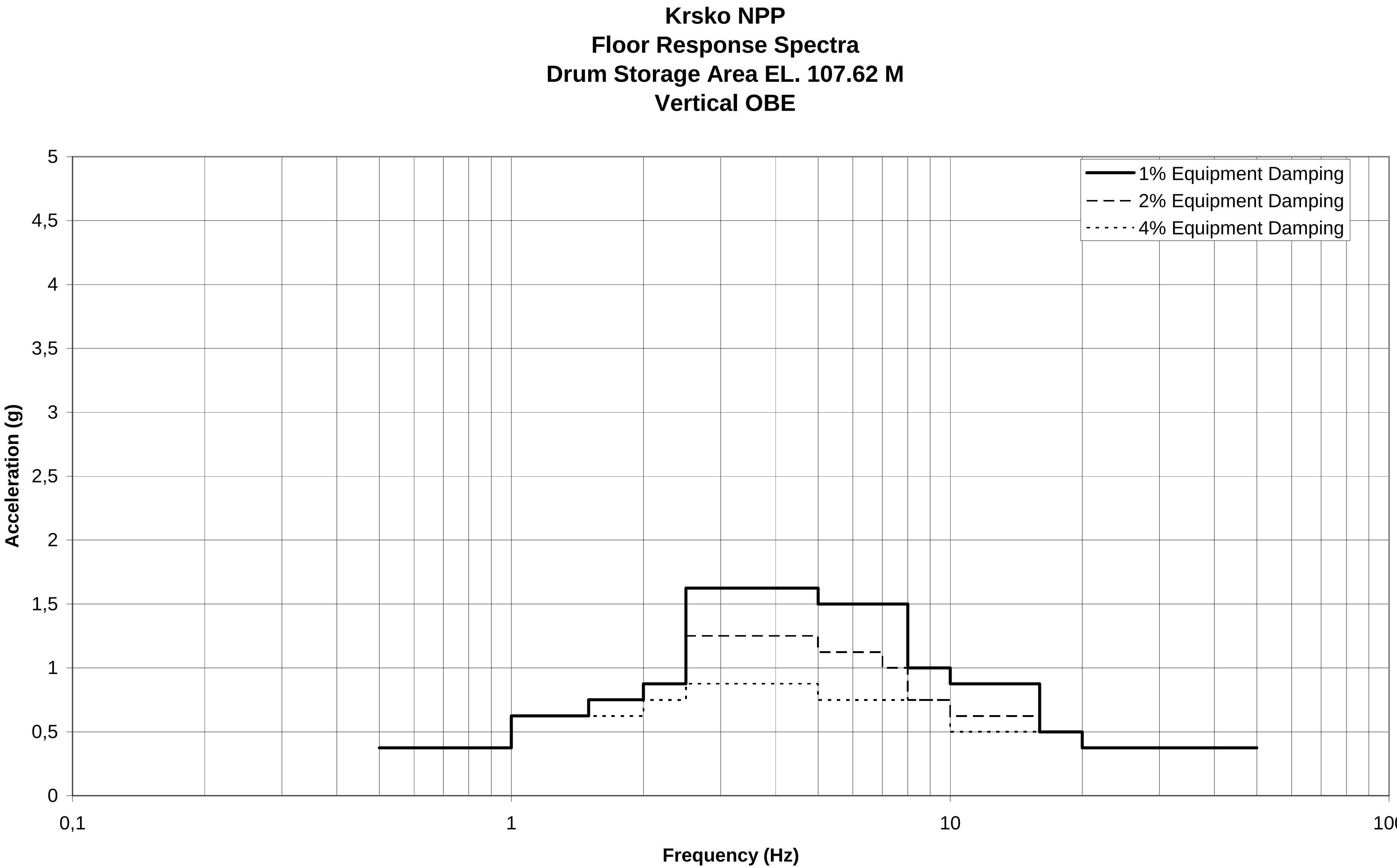

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 107.62 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

Figure A105


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 107.62 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

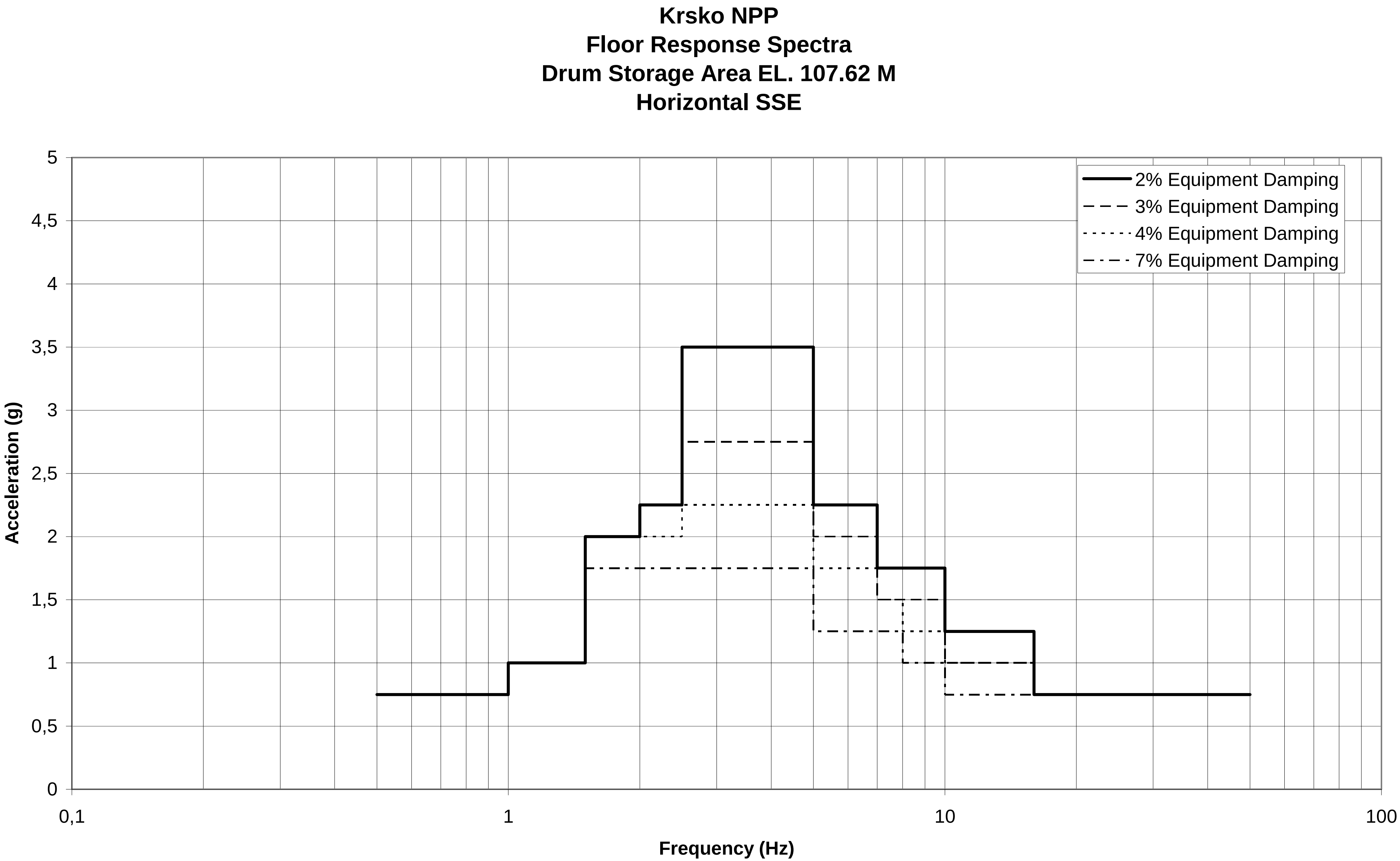
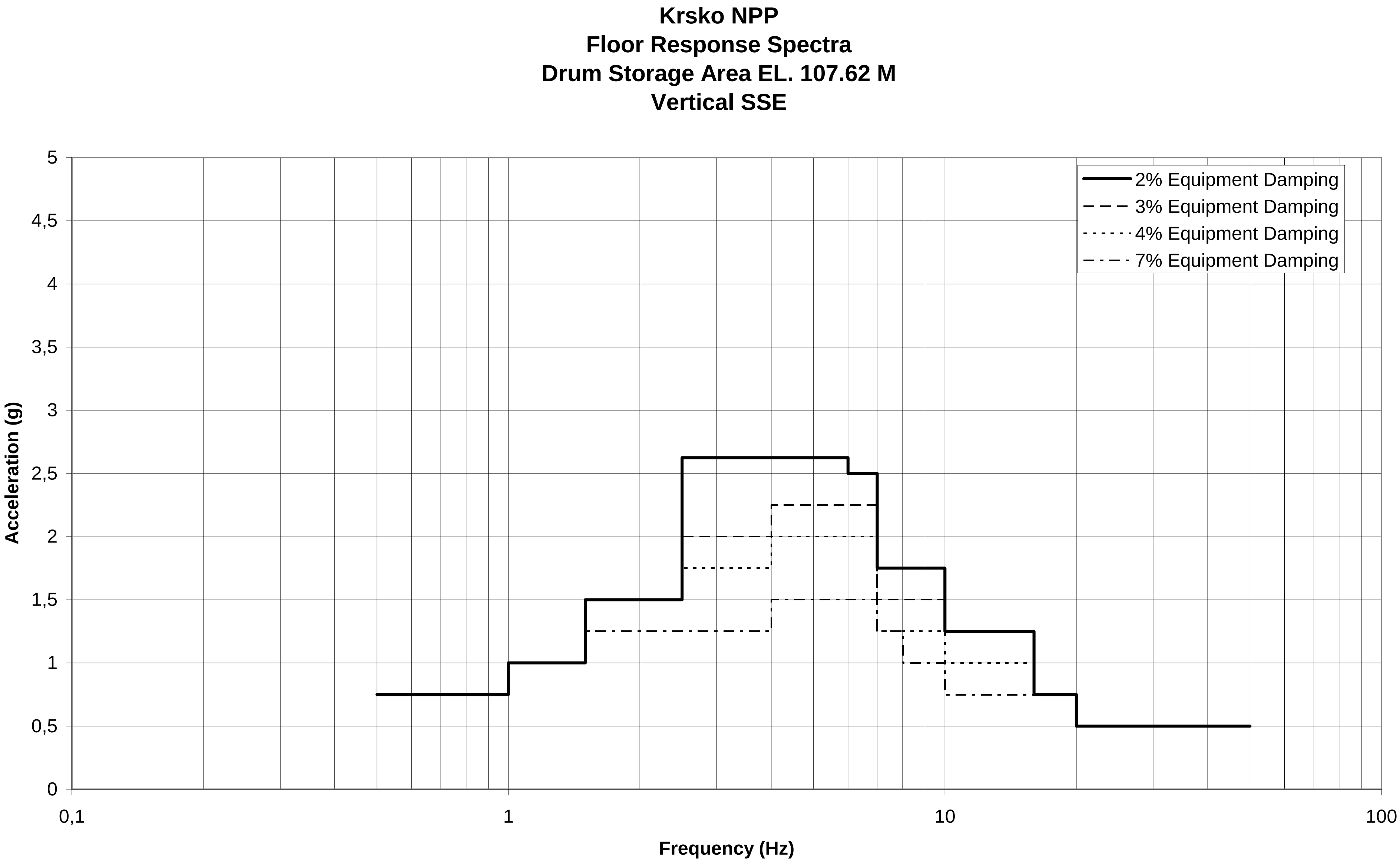

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 107.62 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100

Figure A107


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 107.62 M
Vertical SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 115.55 M
Horizontal OBE

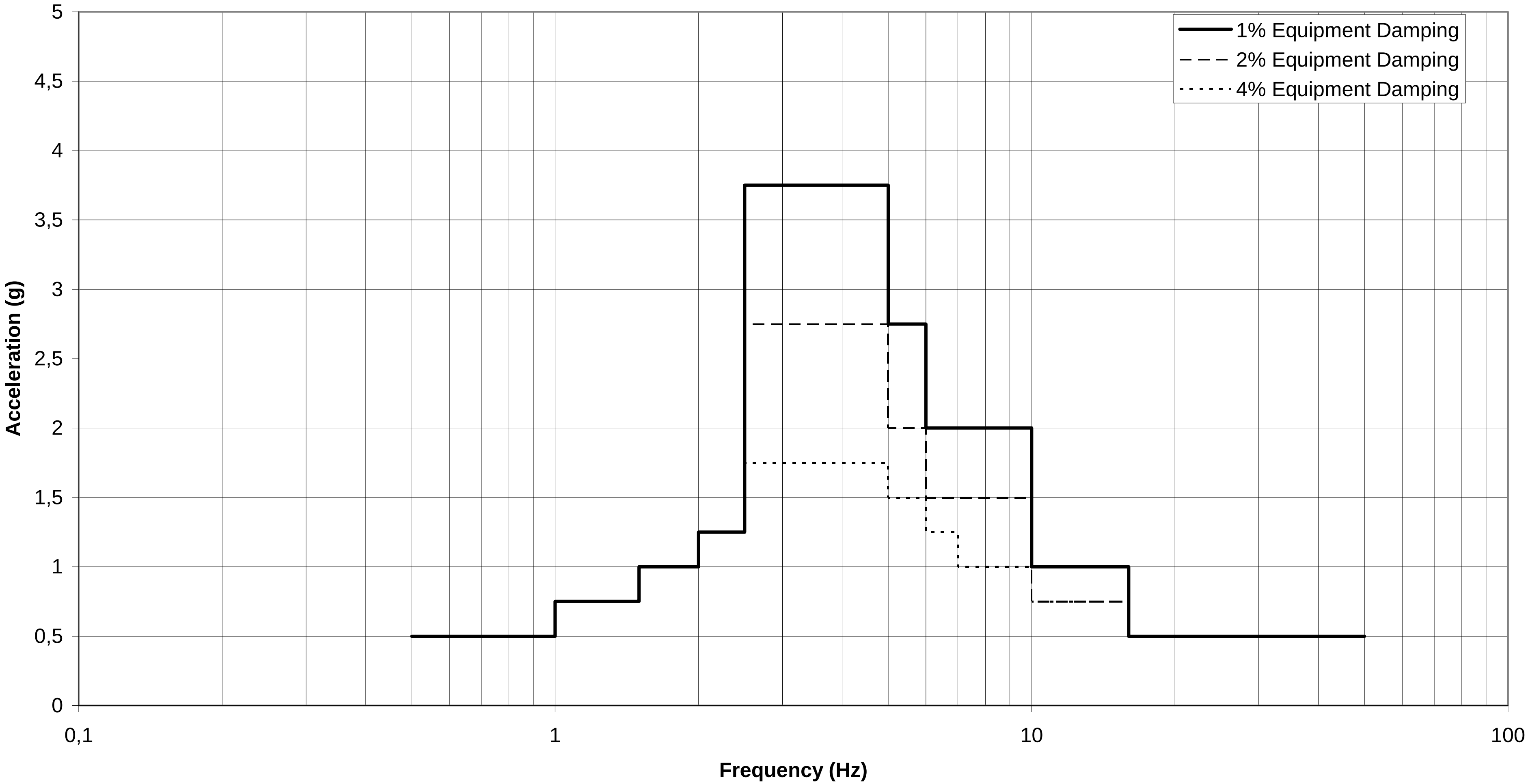
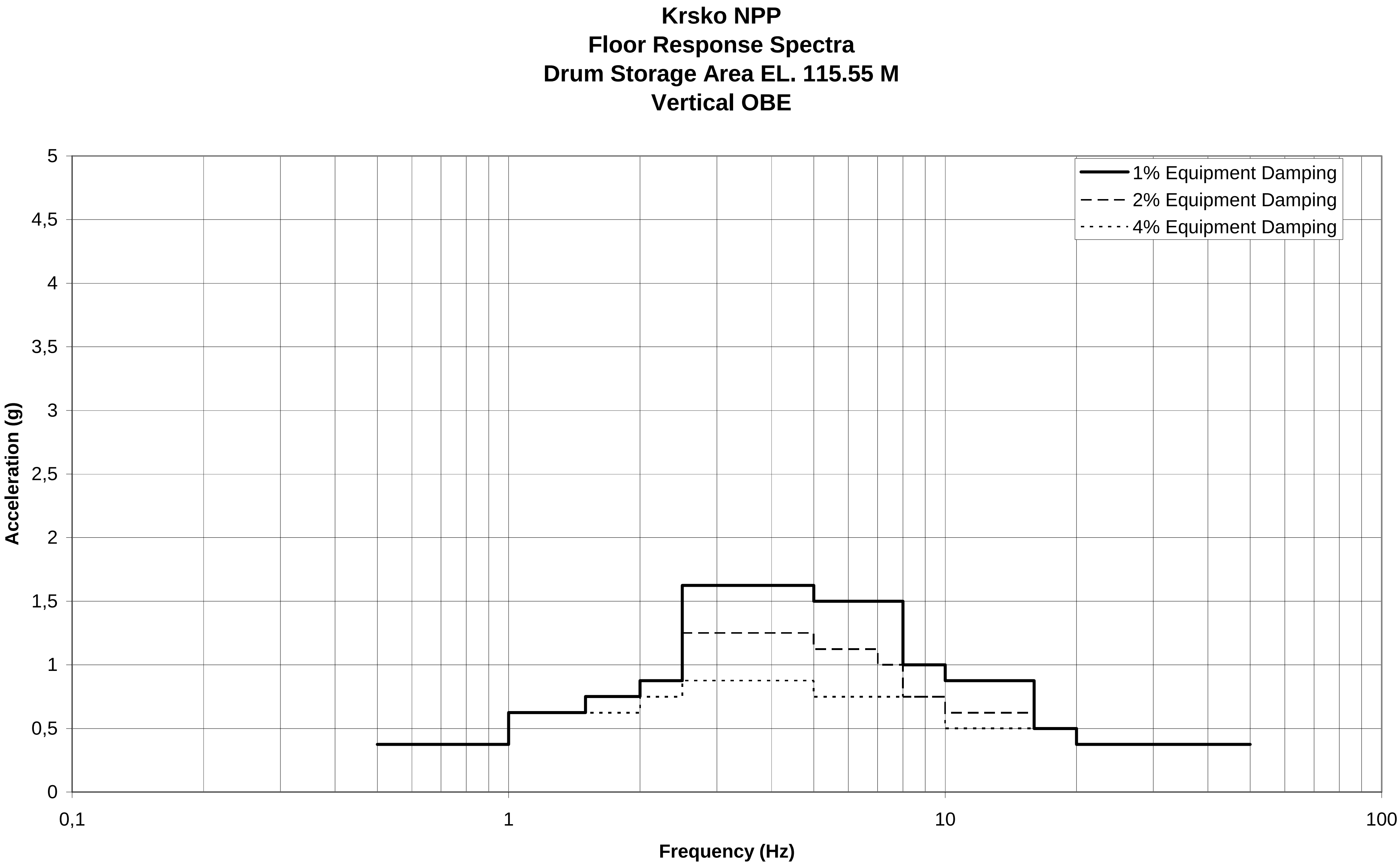
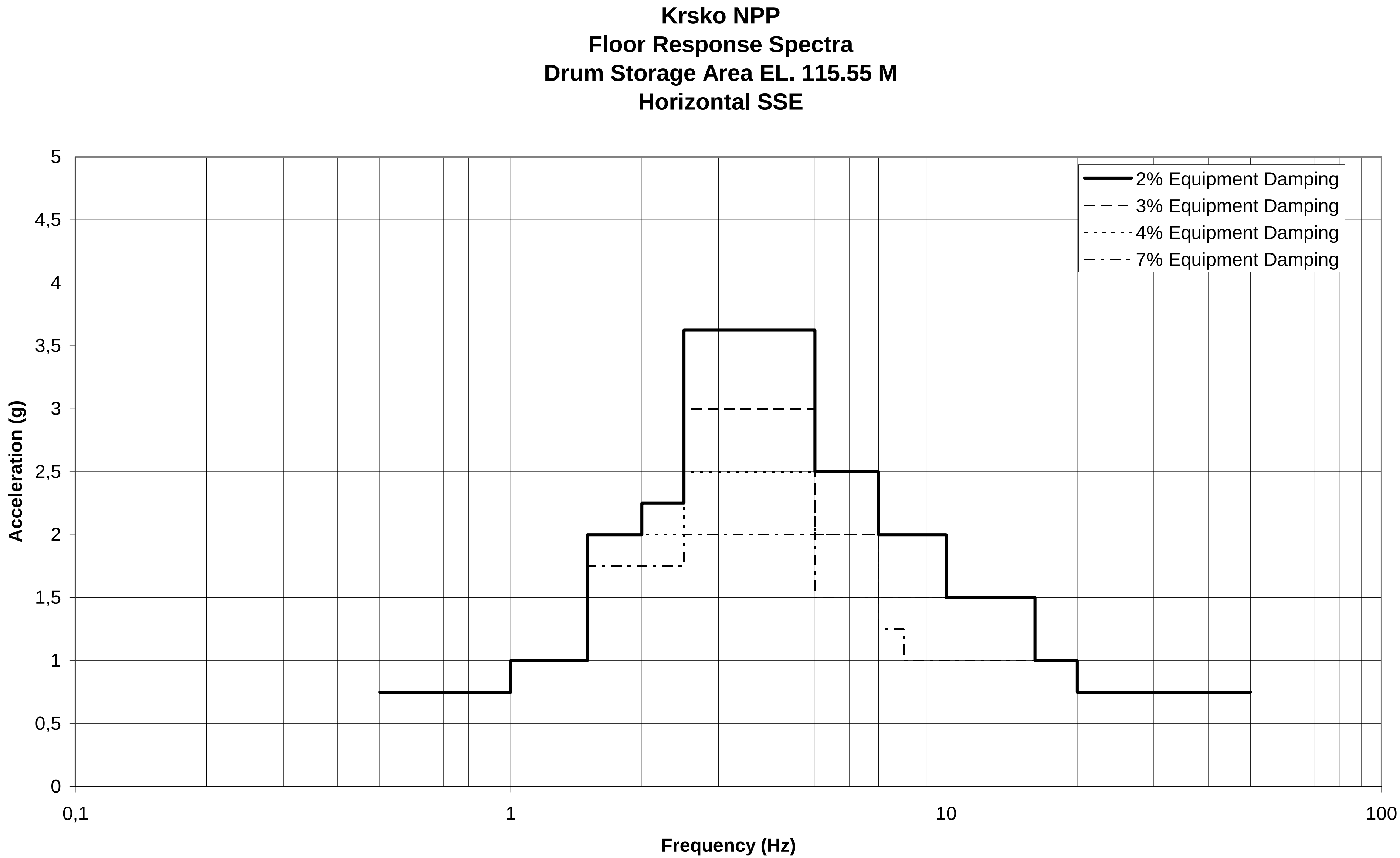
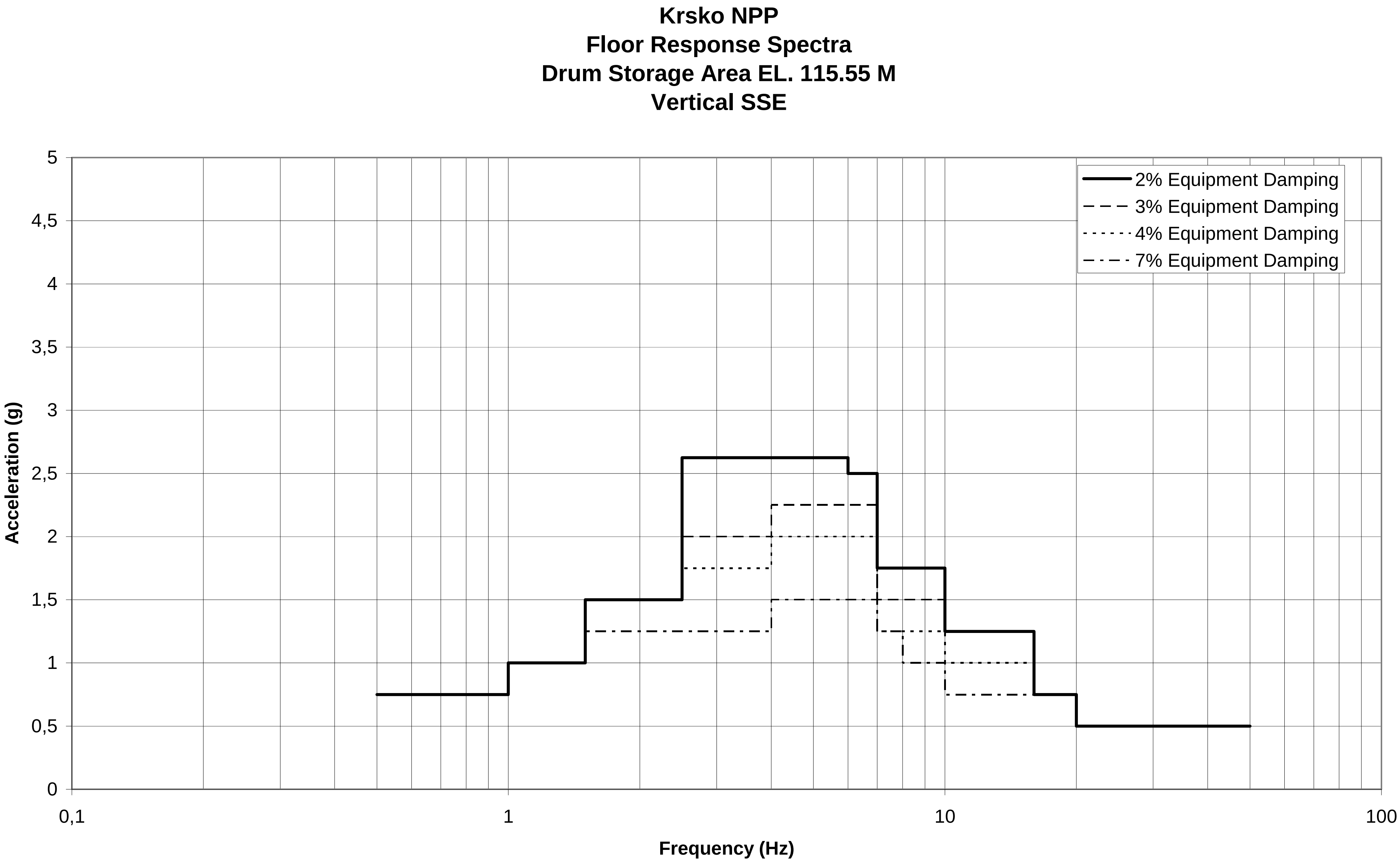
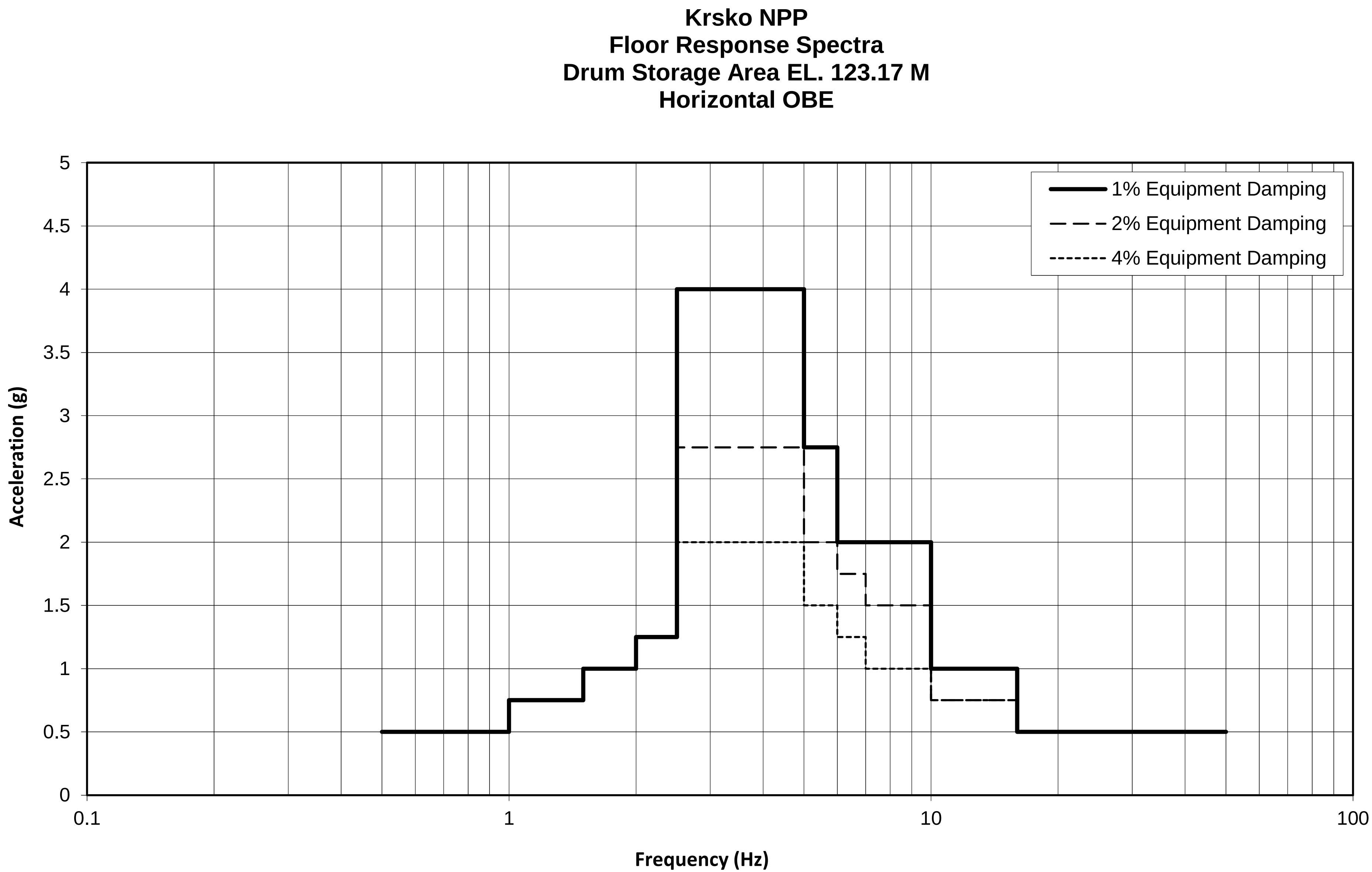


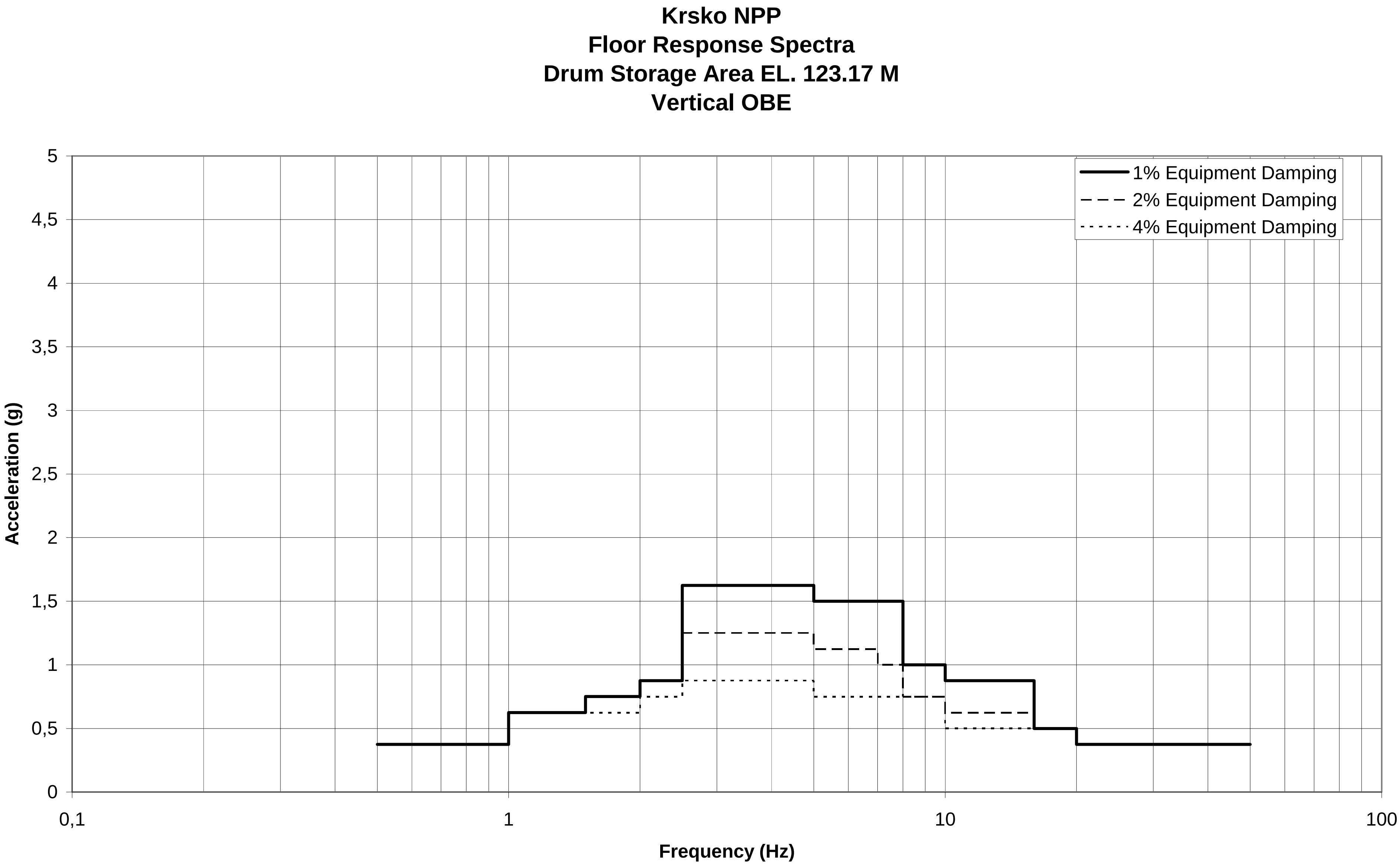
Figure A109


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 115.55 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)

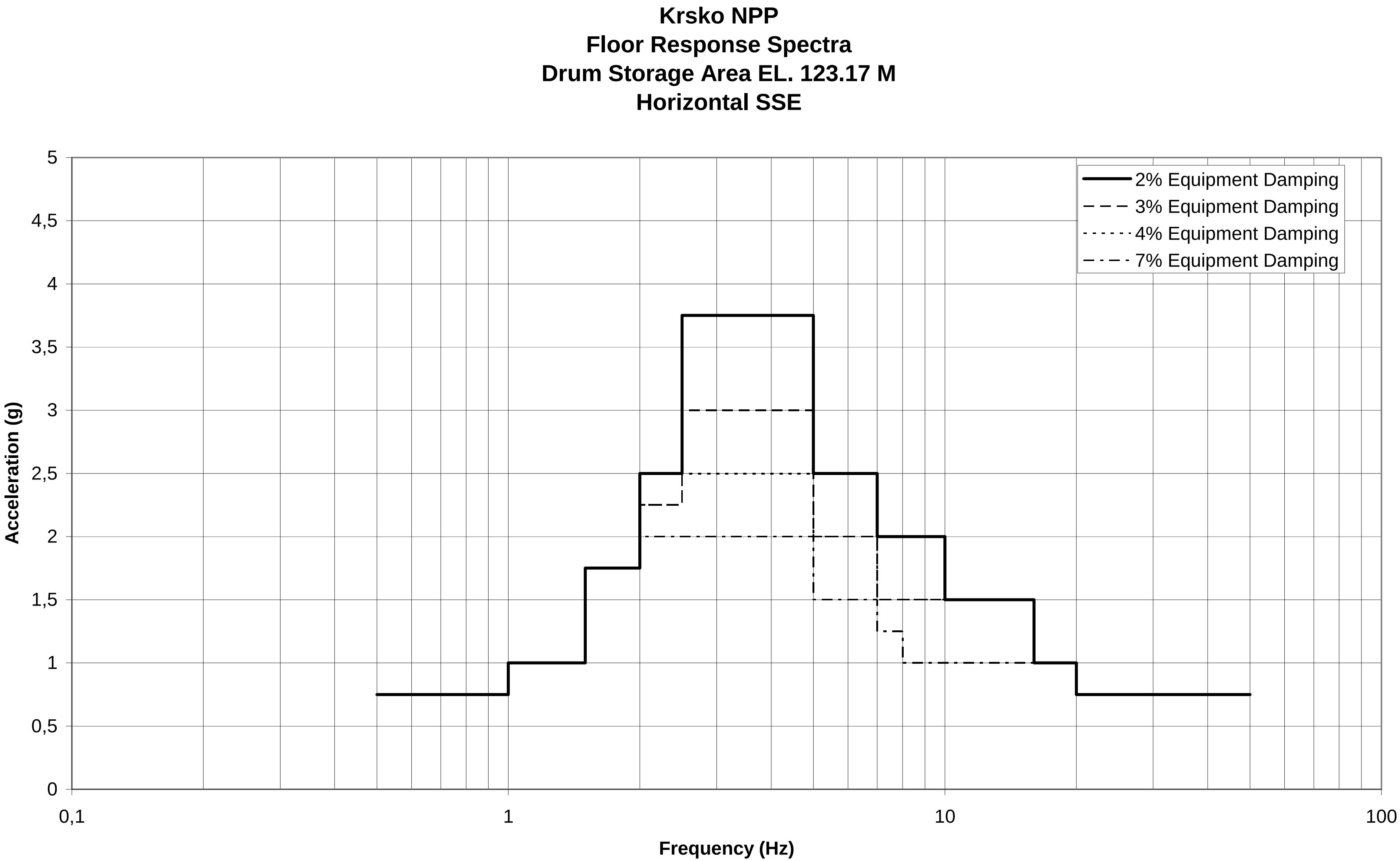

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 115.55 M
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 115.55 M
Vertical SSE
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 123.17 M
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
1
10
100



Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 123.17 M
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
4,5
5
0,1
1
10
100


Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 123.17 M
Horizontal SSE
Acceleration (g)
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Krsko NPP
Floor Response Spectra
Drum Storage Area EL. 123.17 M
Vertical SSE

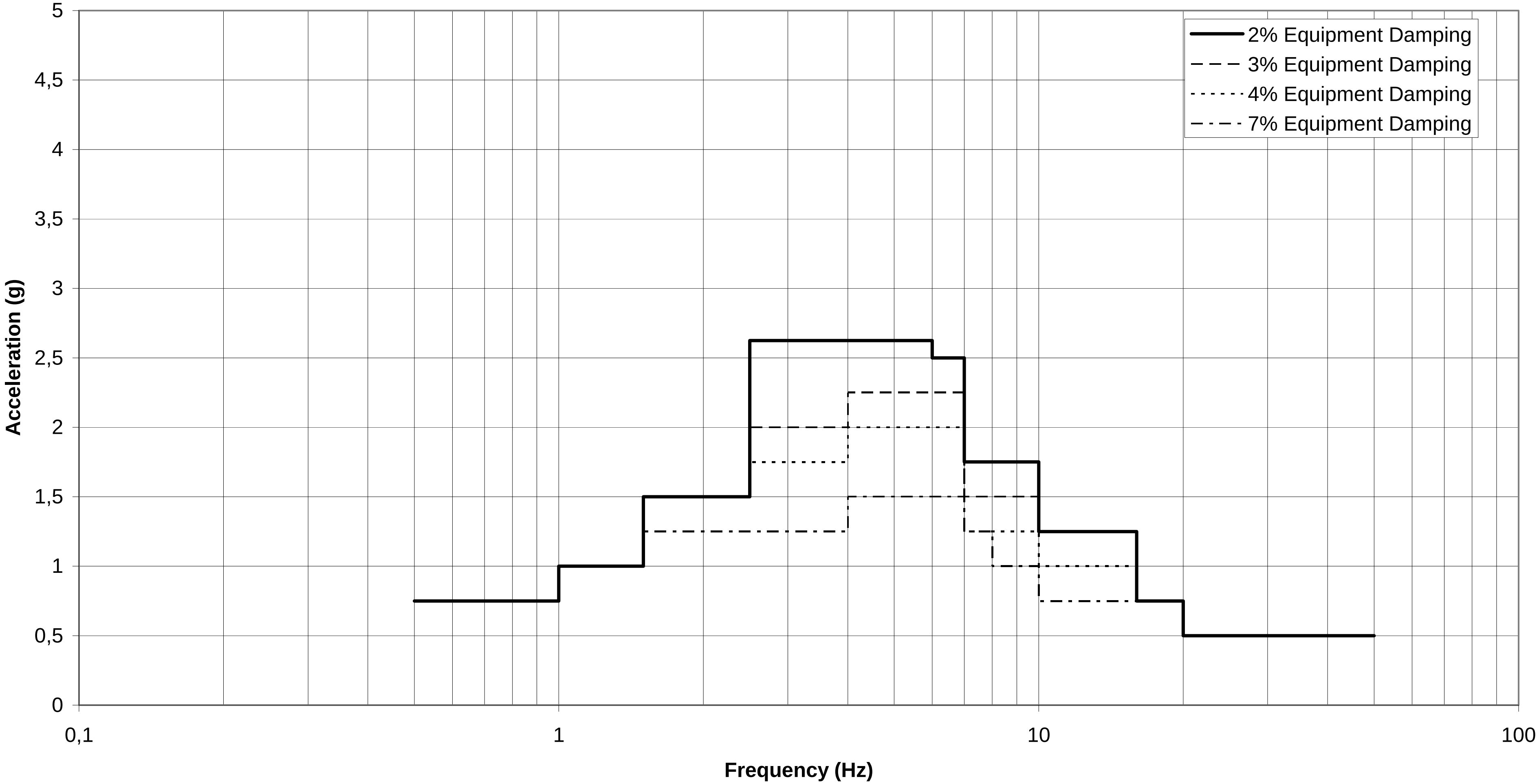
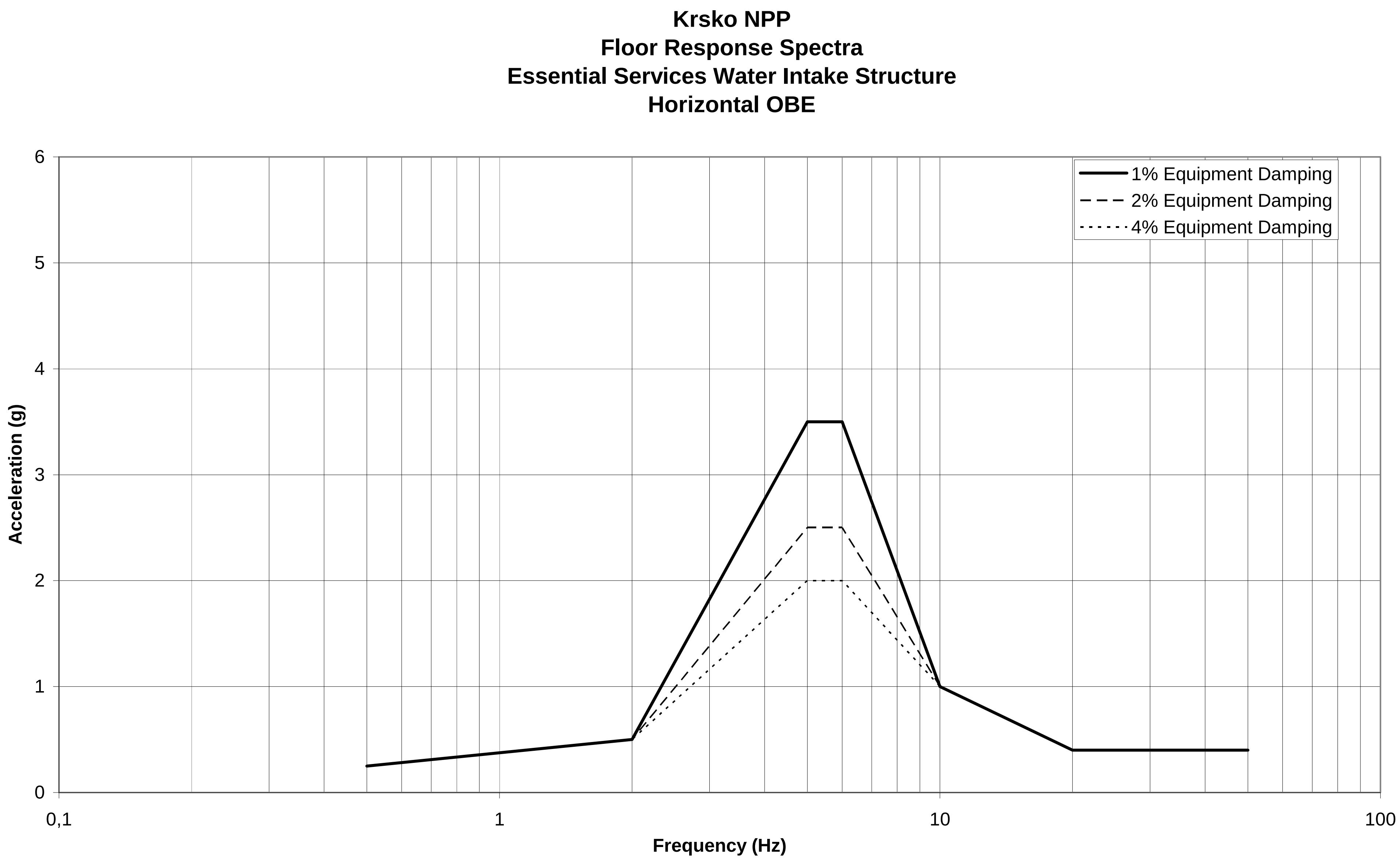


Figure A116


Krsko NPP
Floor Response Spectra
Essential Services Water Intake Structure
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
1
2
3
4
5
6
0,1
1
10
100
Frequency (Hz)

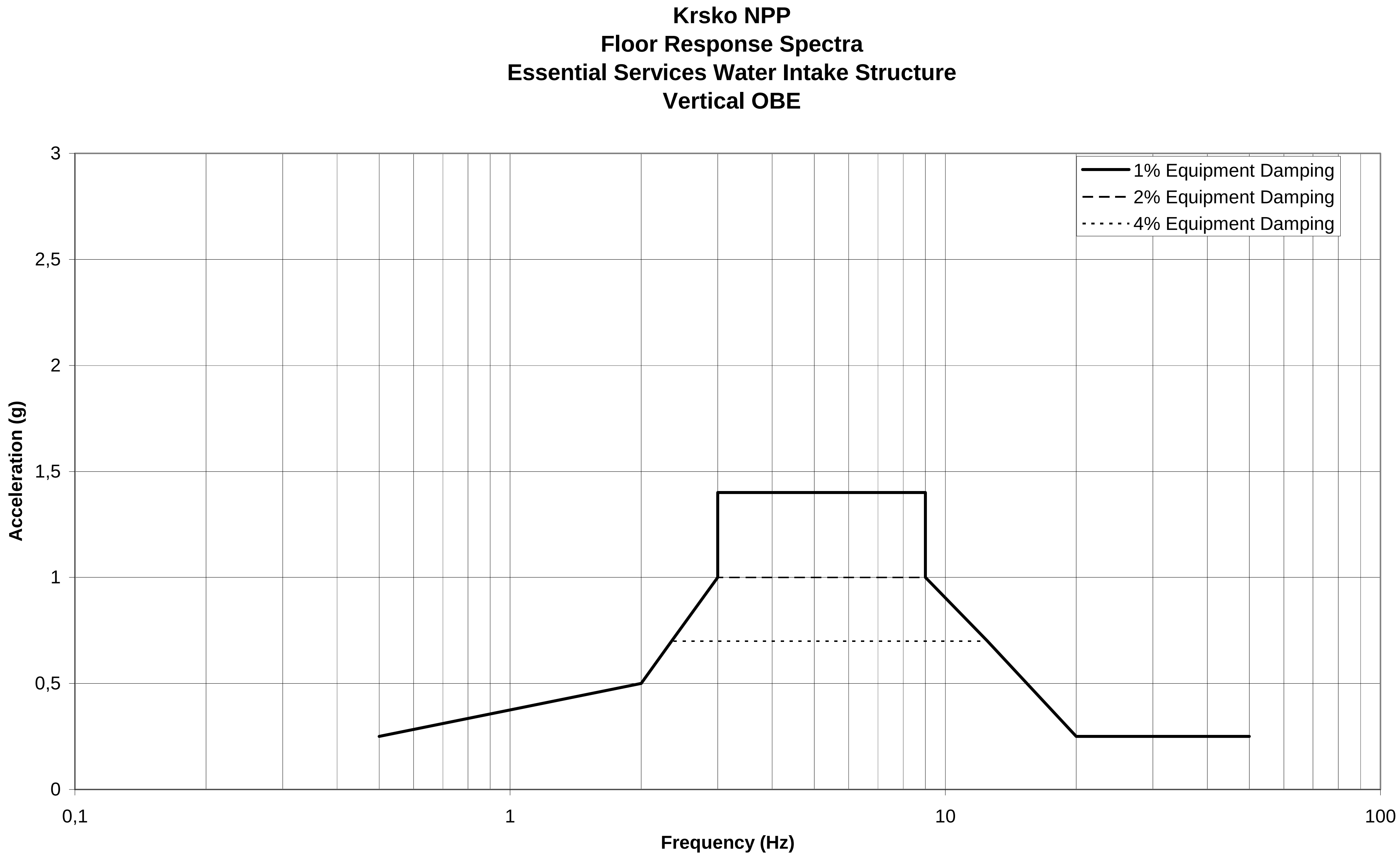

Krsko NPP
Floor Response Spectra
Essential Services Water Intake Structure
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
0,1
1
10
100
Frequency (Hz)

Figure A118

Krsko NPP
Floor Response Spectra
Essential Services Water Intake Structure
Horizontal SSE

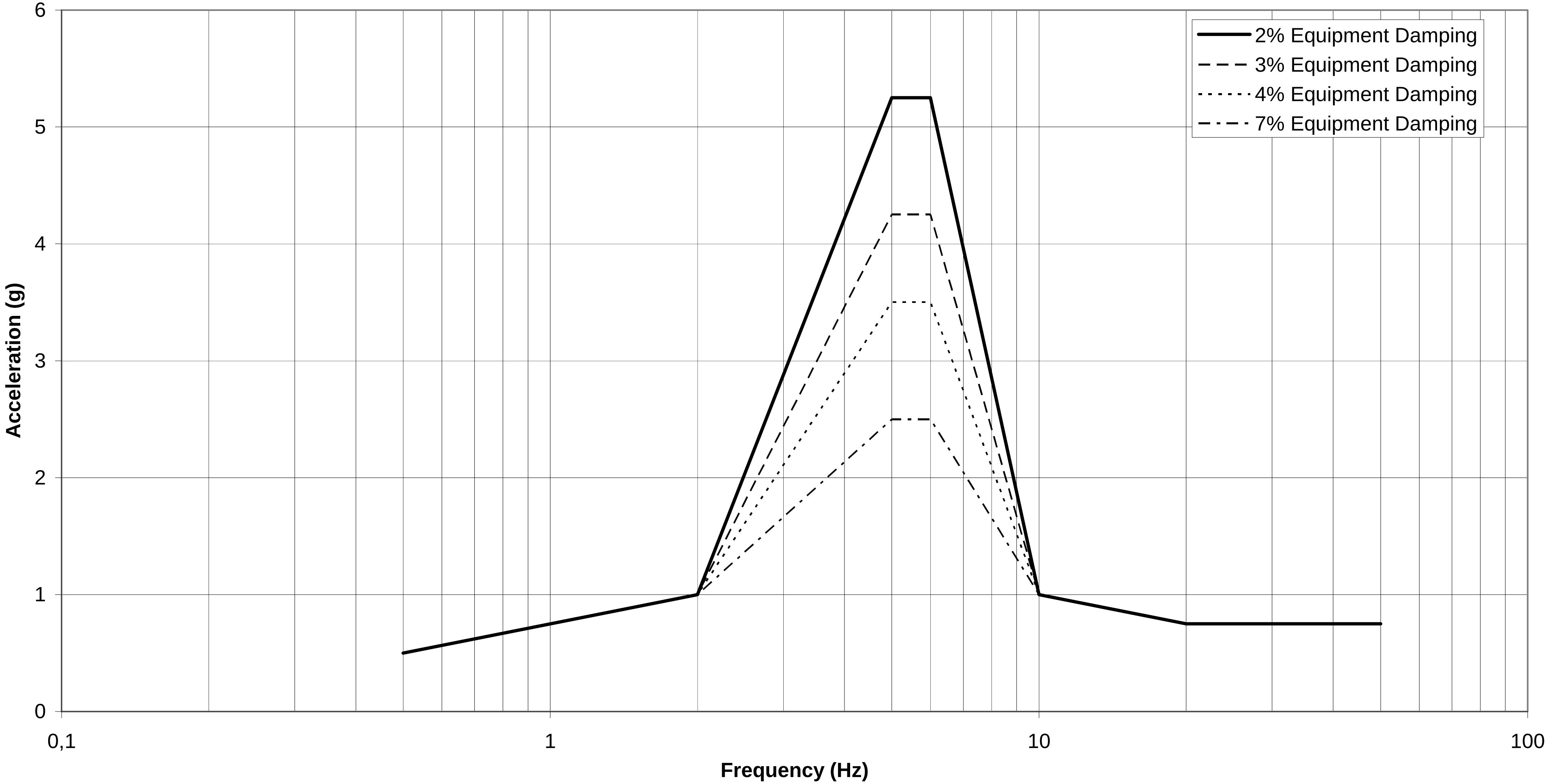


Figure A119

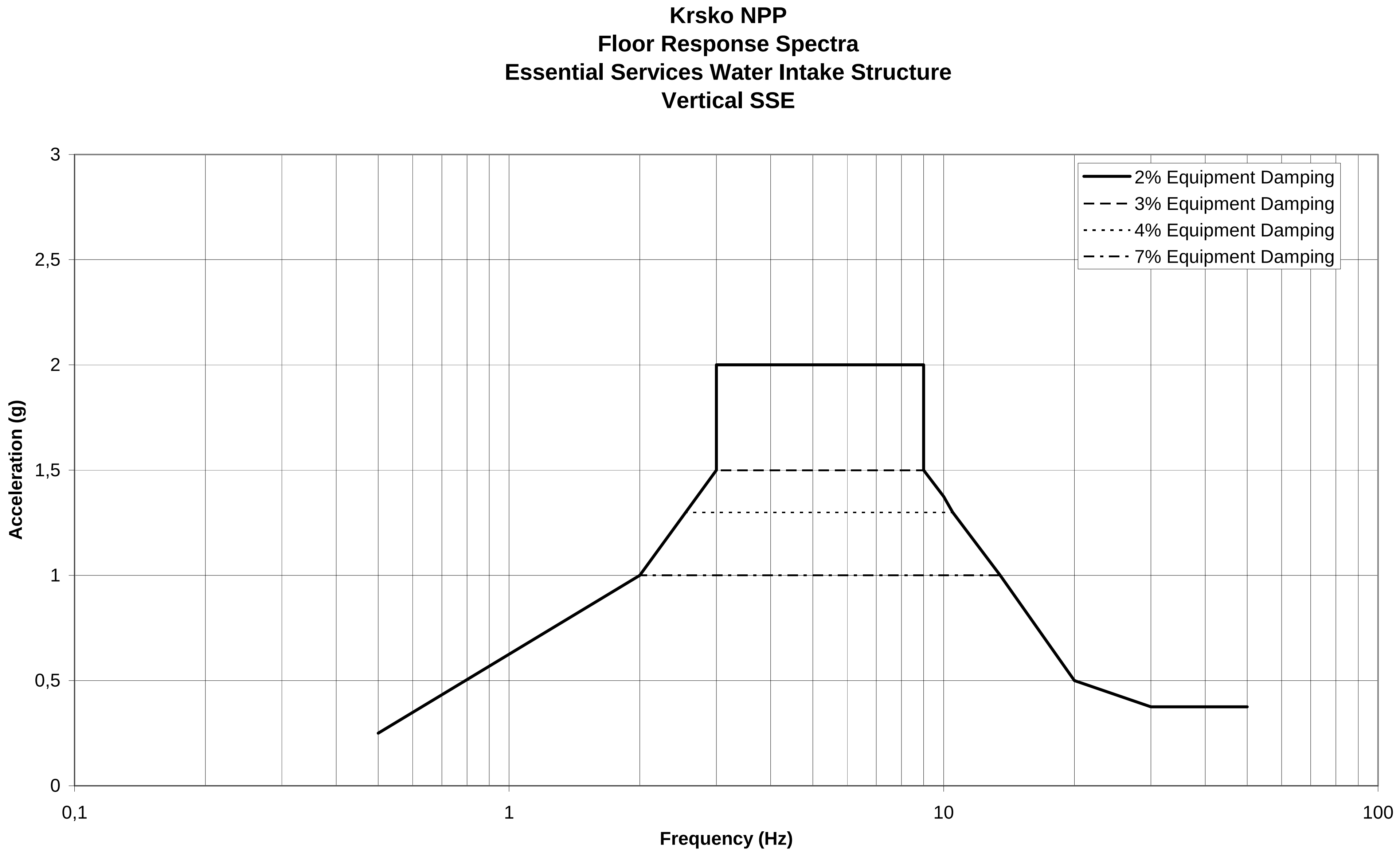
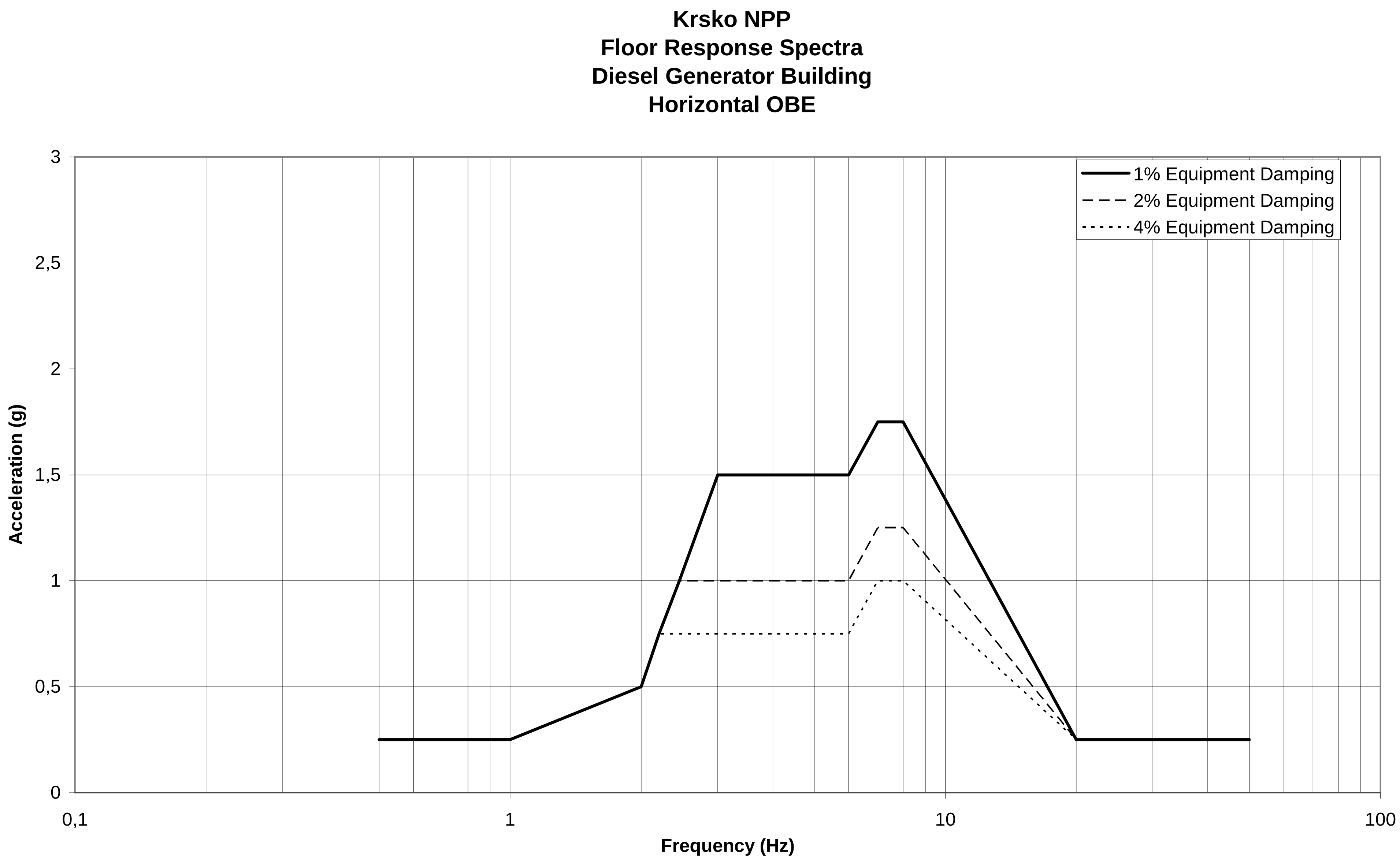
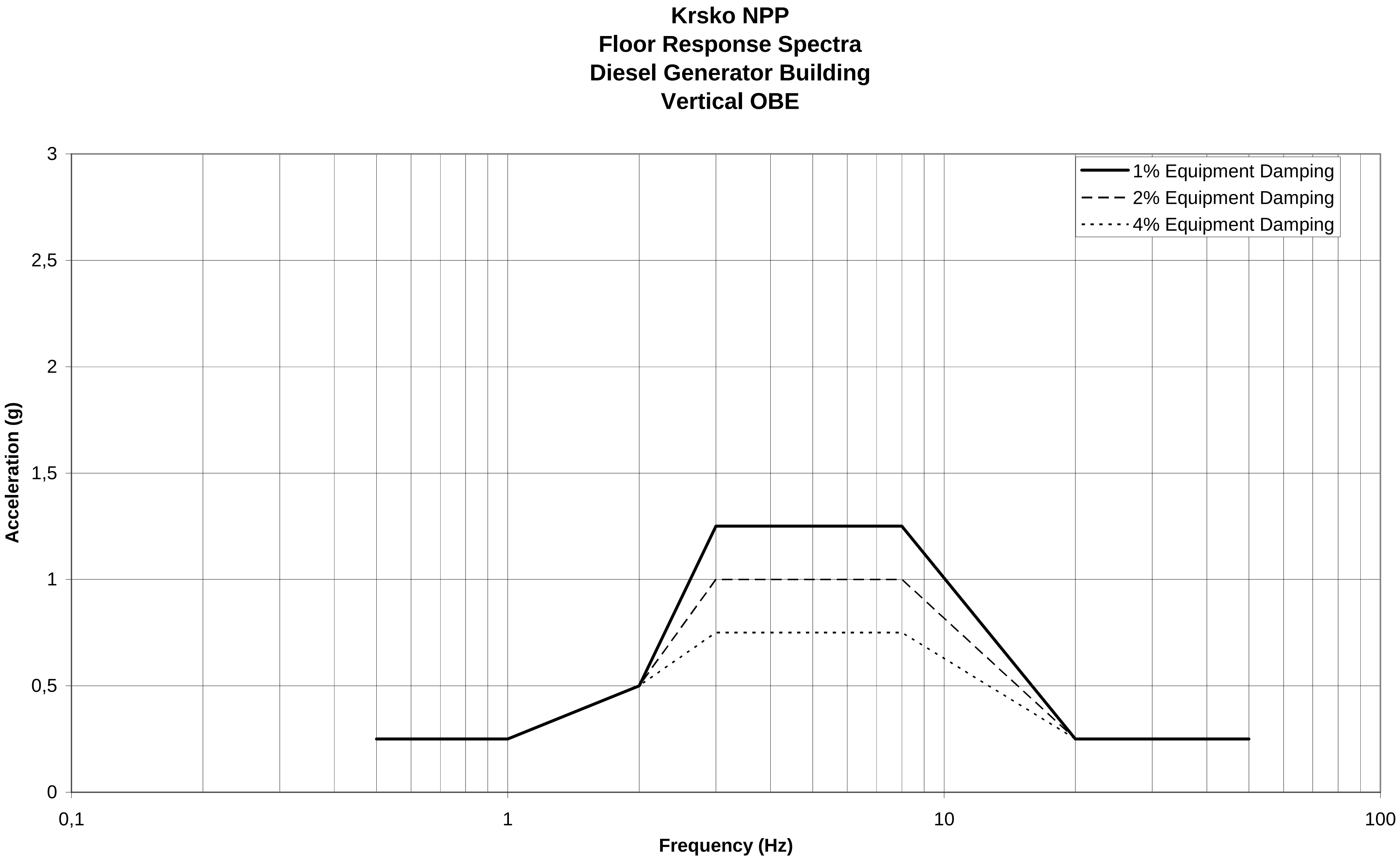
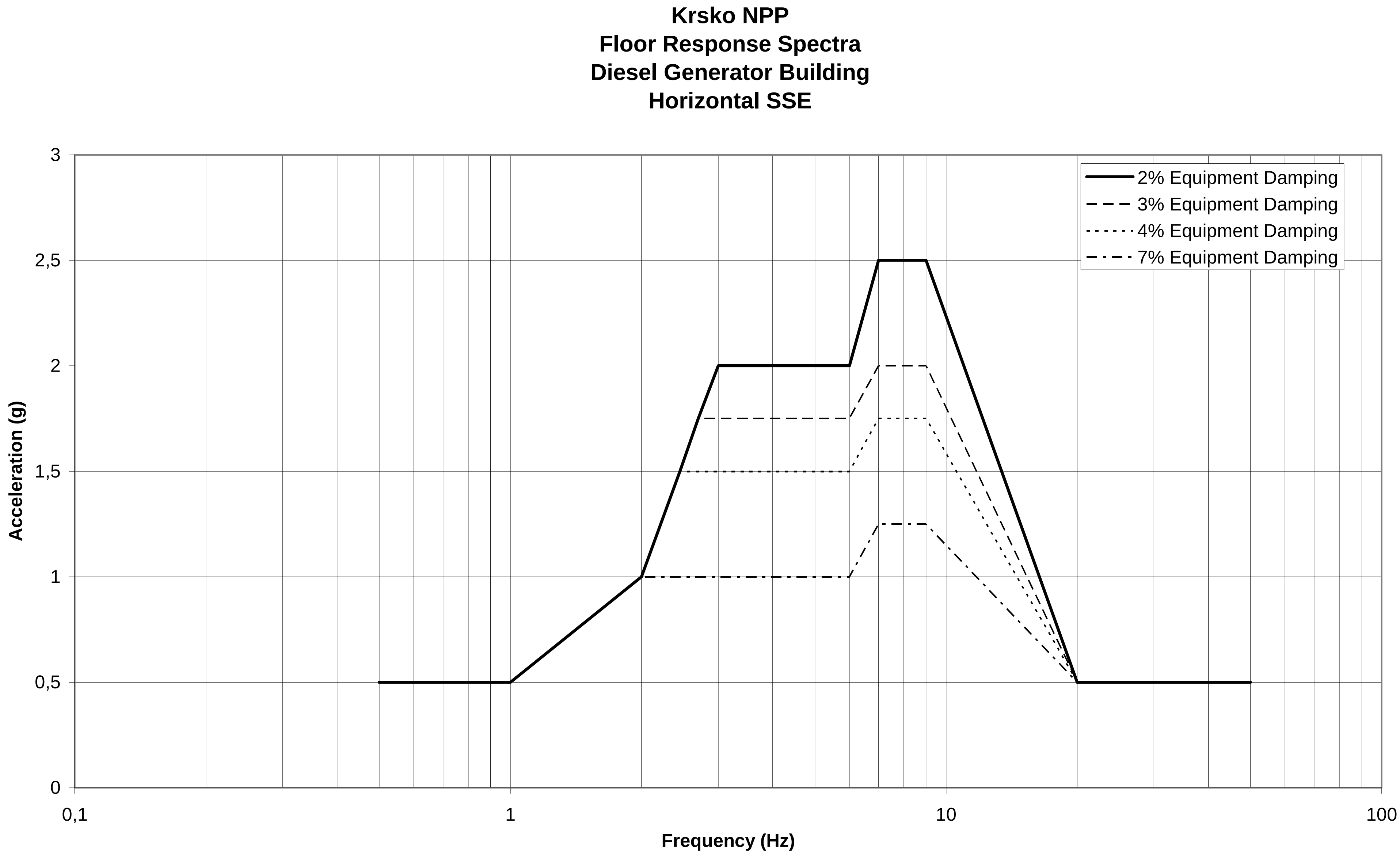

Krsko NPP
Floor Response Spectra
Essential Services Water Intake Structure
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
0,1
1
10
100

Figure A120


Krsko NPP
Floor Response Spectra
Diesel Generator Building
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
0,1
1
10
100
Frequency (Hz)


Krsko NPP
Floor Response Spectra
Diesel Generator Building
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
Frequency (Hz)



Krsko NPP
Floor Response Spectra
Diesel Generator Building
Horizontal SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
0,1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A123

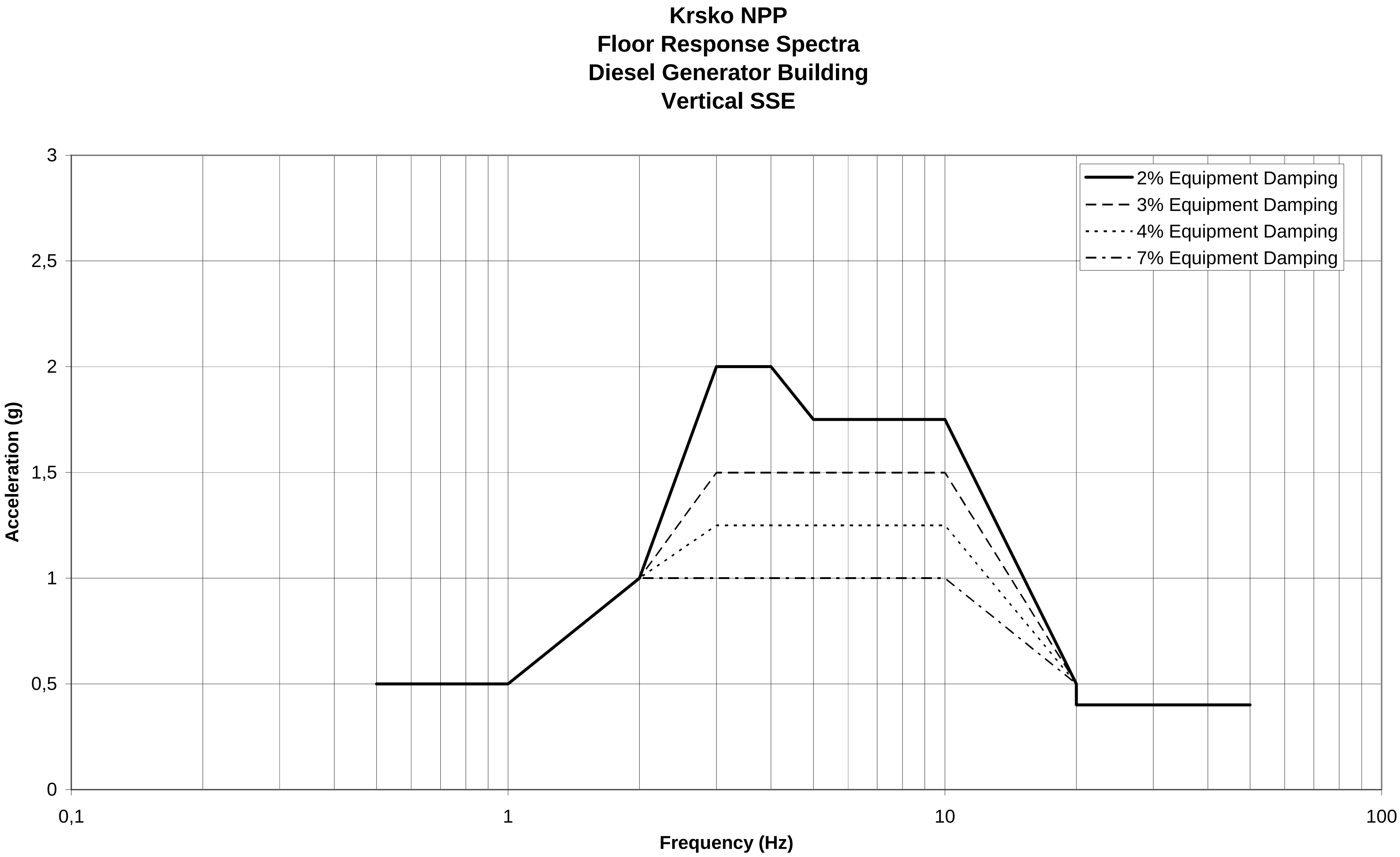
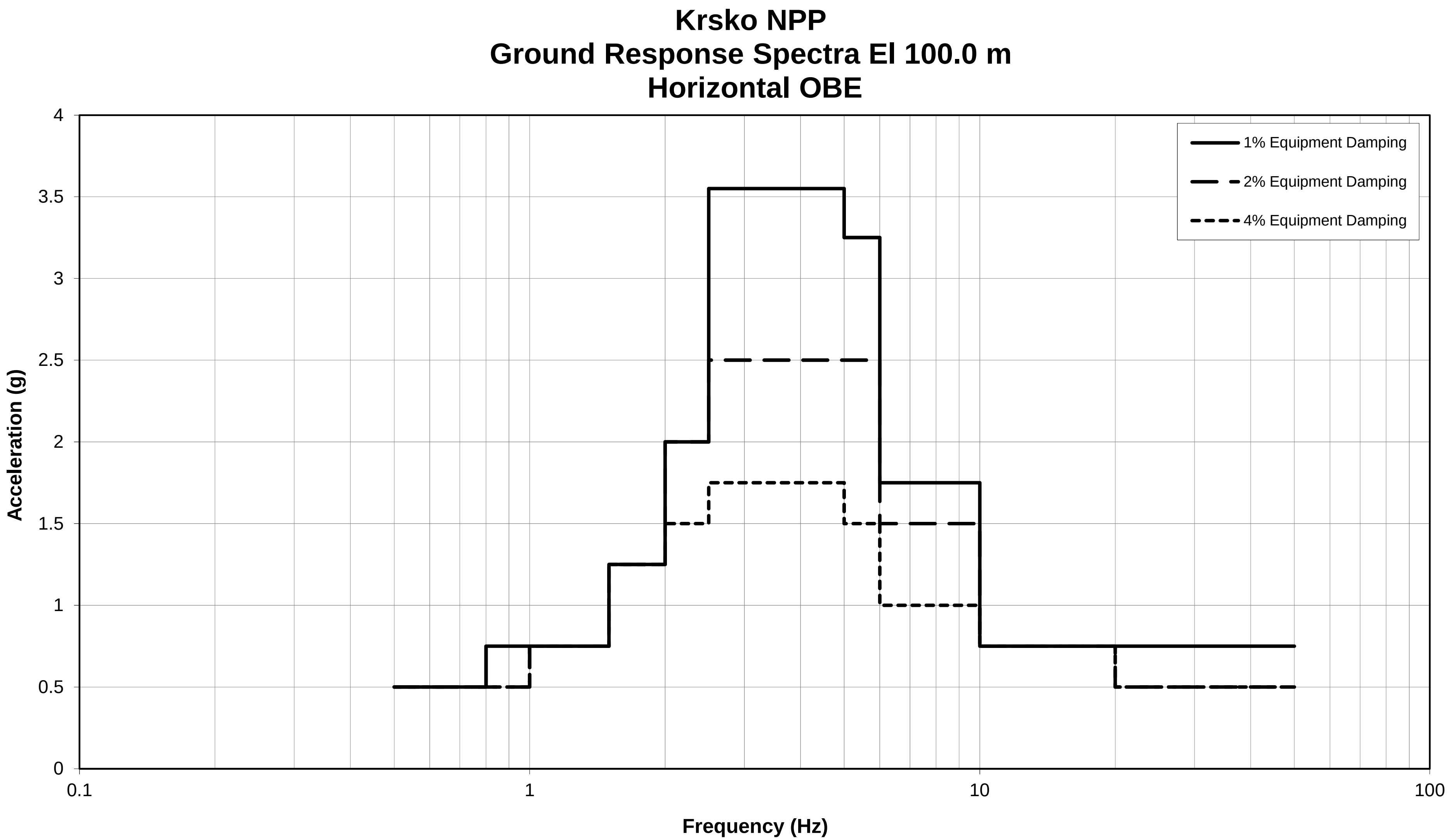

Krsko NPP
Floor Response Spectra
Diesel Generator Building
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
0,1
1
10
100
Frequency (Hz)

Figure A124


Krsko NPP
Ground Response Spectra El 100.0 m
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.1
1
10
100

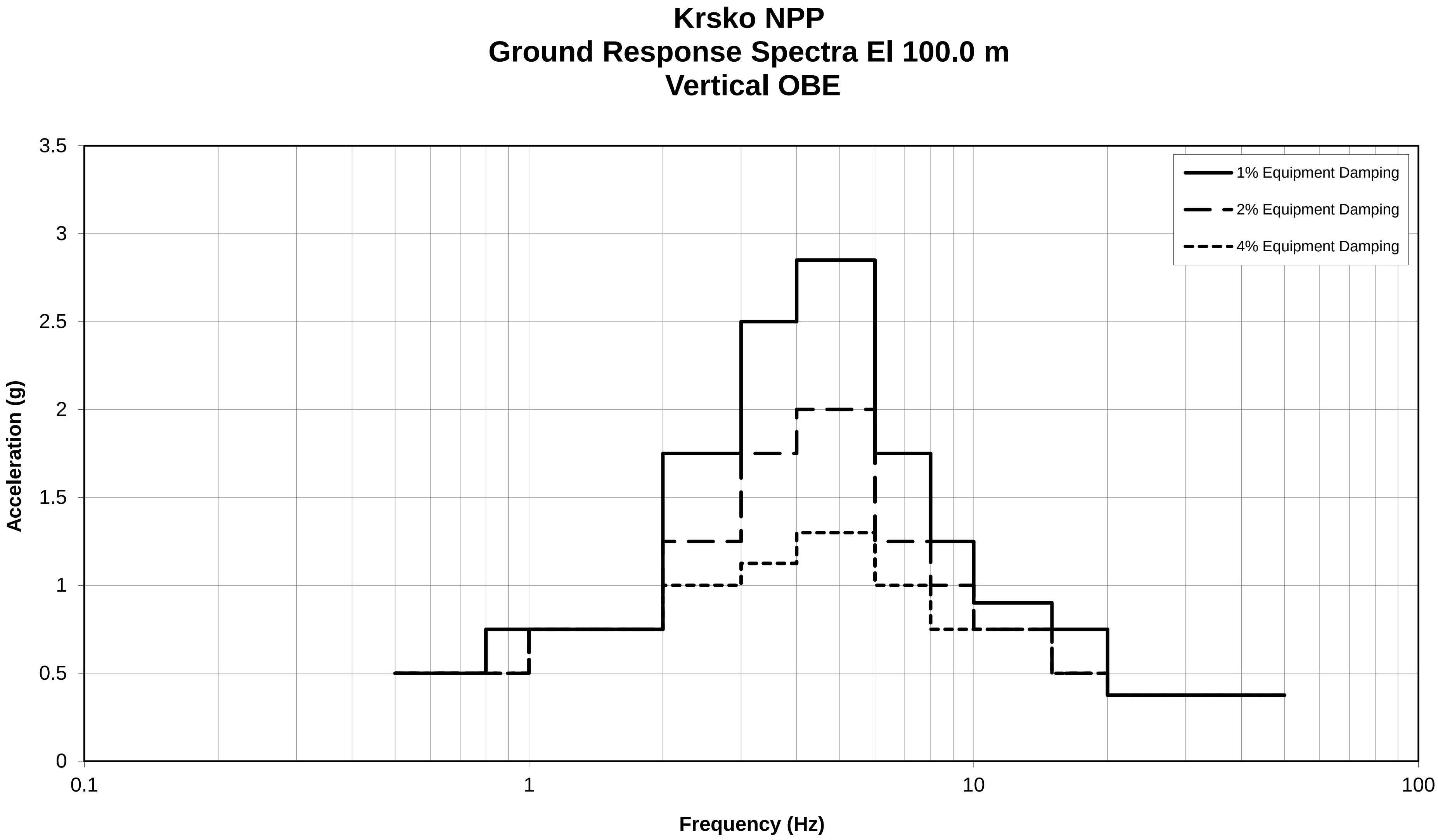

Krsko NPP
Ground Response Spectra El 100.0 m
Vertical OBE
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
3.5
3
2.5
2
1.5
1
0.5
0
0.1
1
10
100
Frequency (Hz)

Figure A126

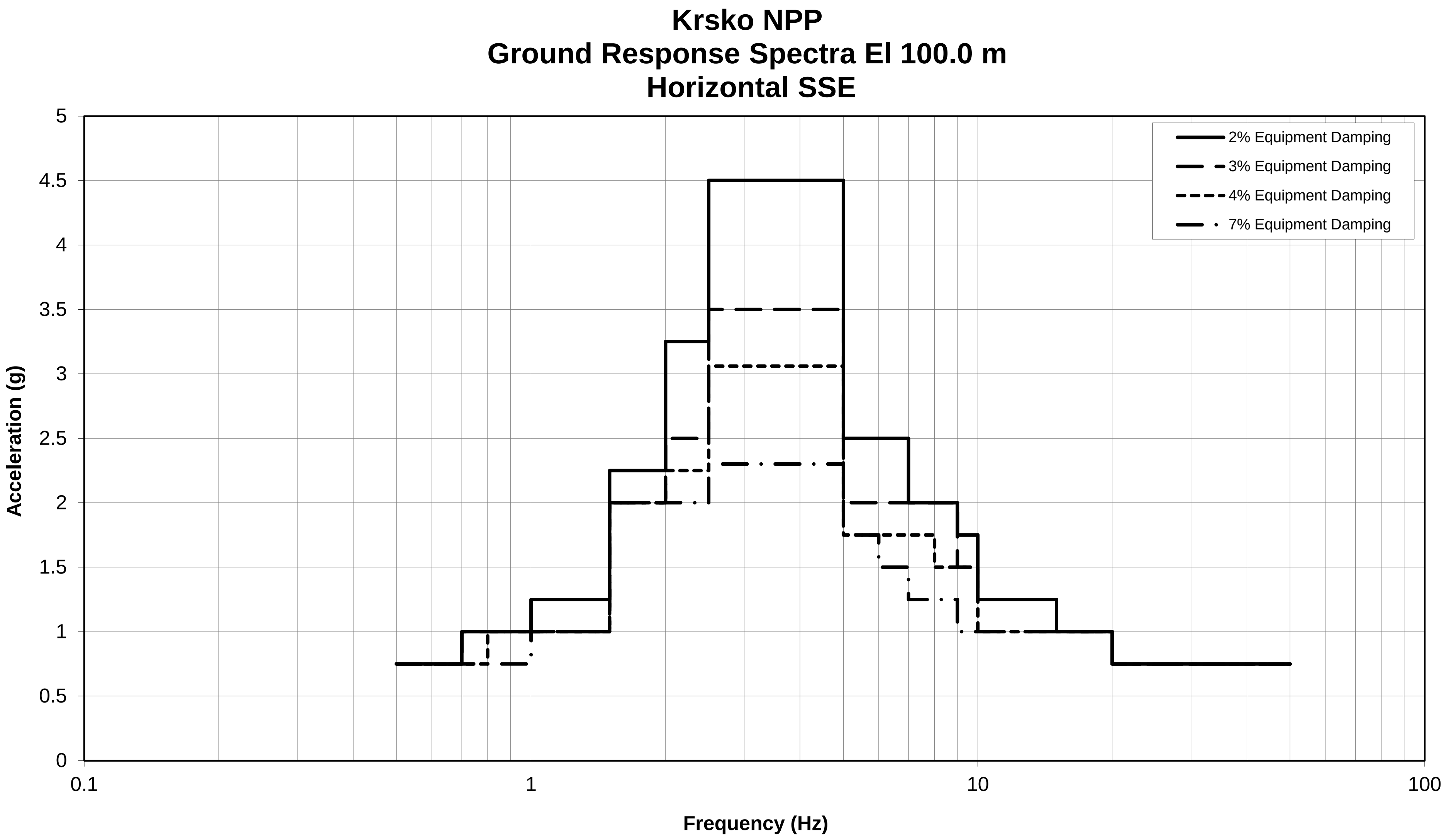

Krsko NPP
Ground Response Spectra El 100.0 m
Horizontal SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
1
10
100

Figure A127

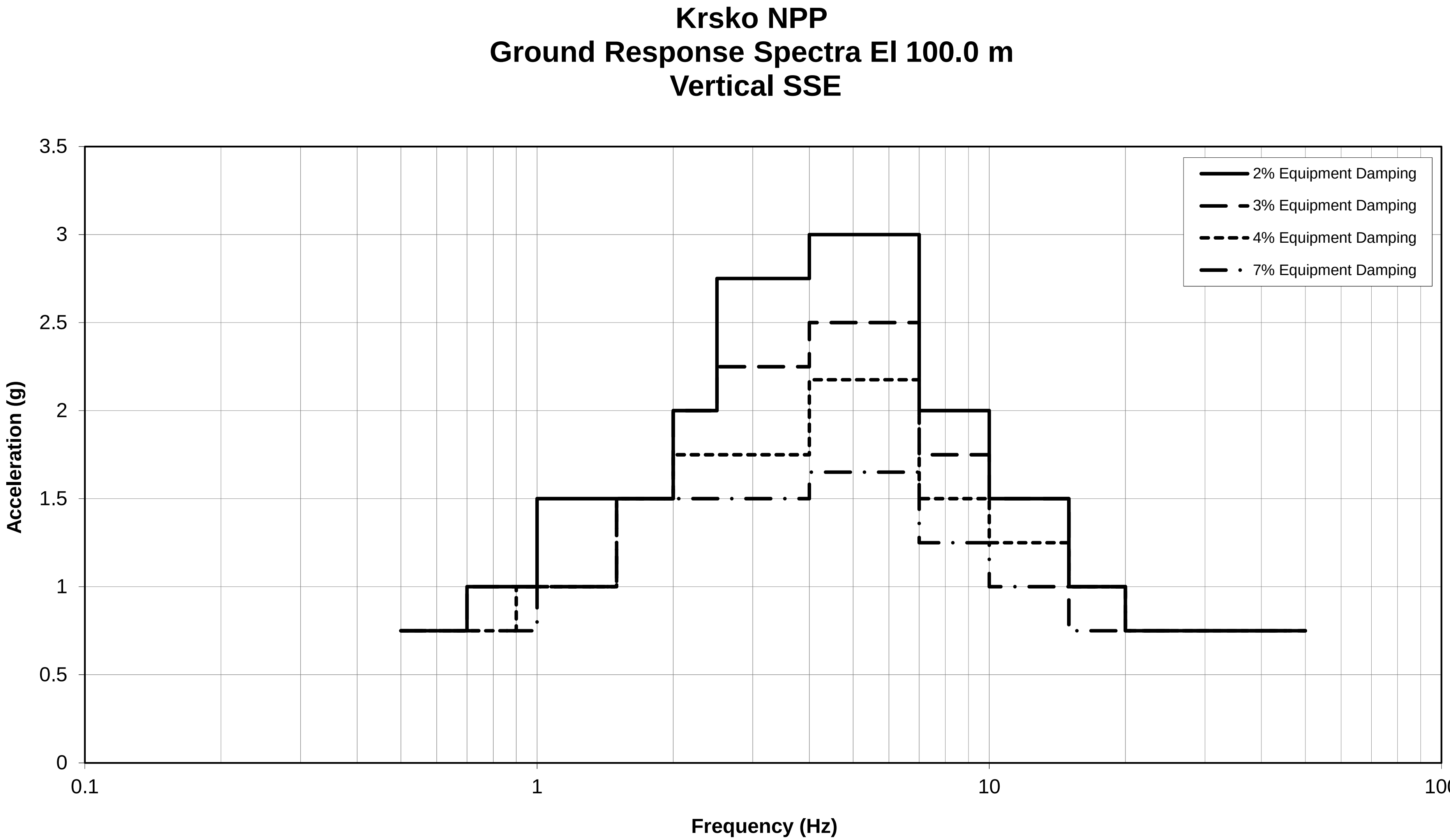

Krsko NPP
Ground Response Spectra El 100.0 m
Vertical SSE
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
0.5
1
1.5
2
2.5
3
3.5
0.1
1
10
100

Figure A128

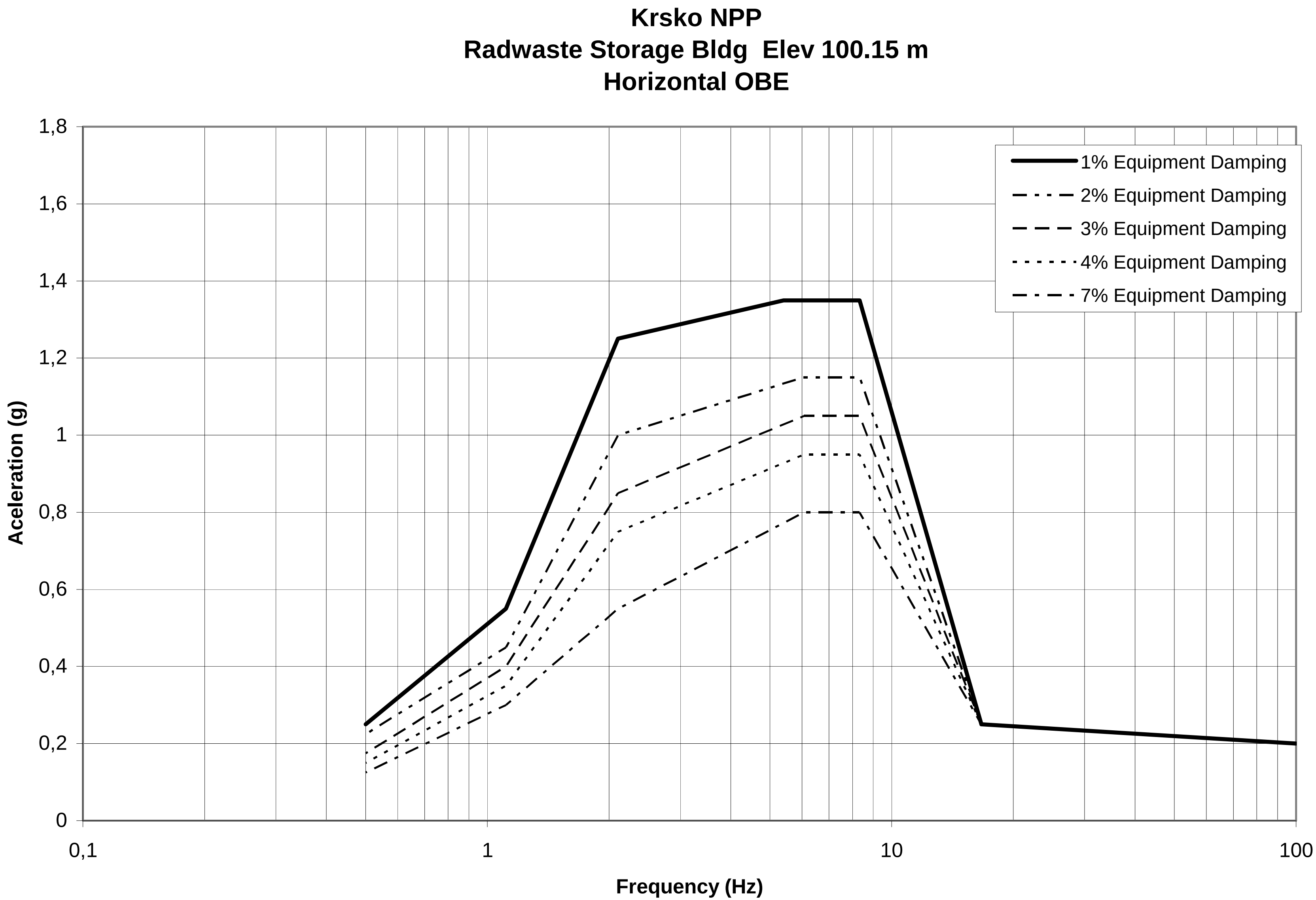

Krsko NPP
Radwaste Storage Bldg Elev 100.15 m
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Aceleration (g)
0
0,2
0,4
0,6
0,8
1
1,2
1,4
1,6
1,8
0,1
1
10
100
Frequency (Hz)

Figure A129

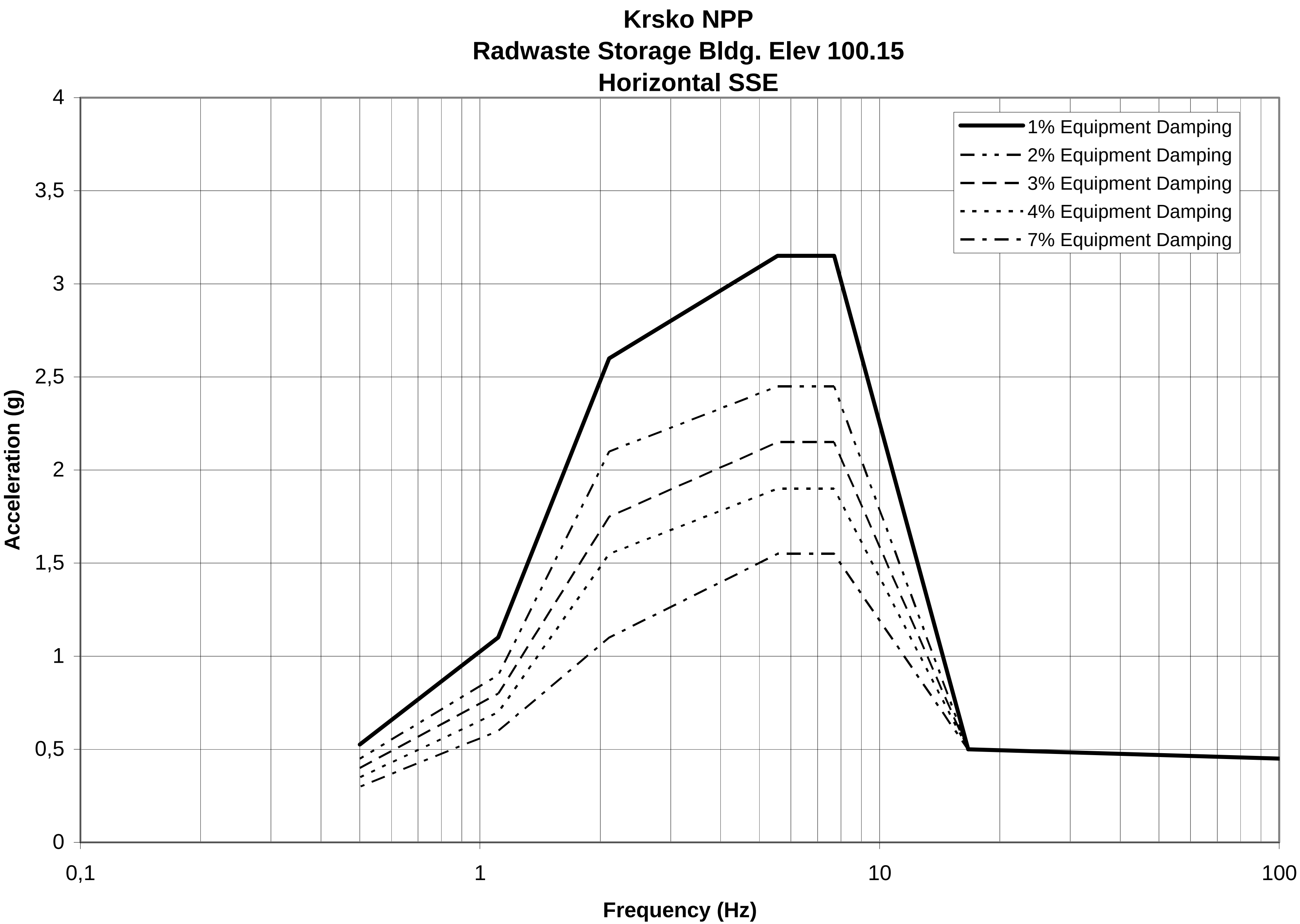
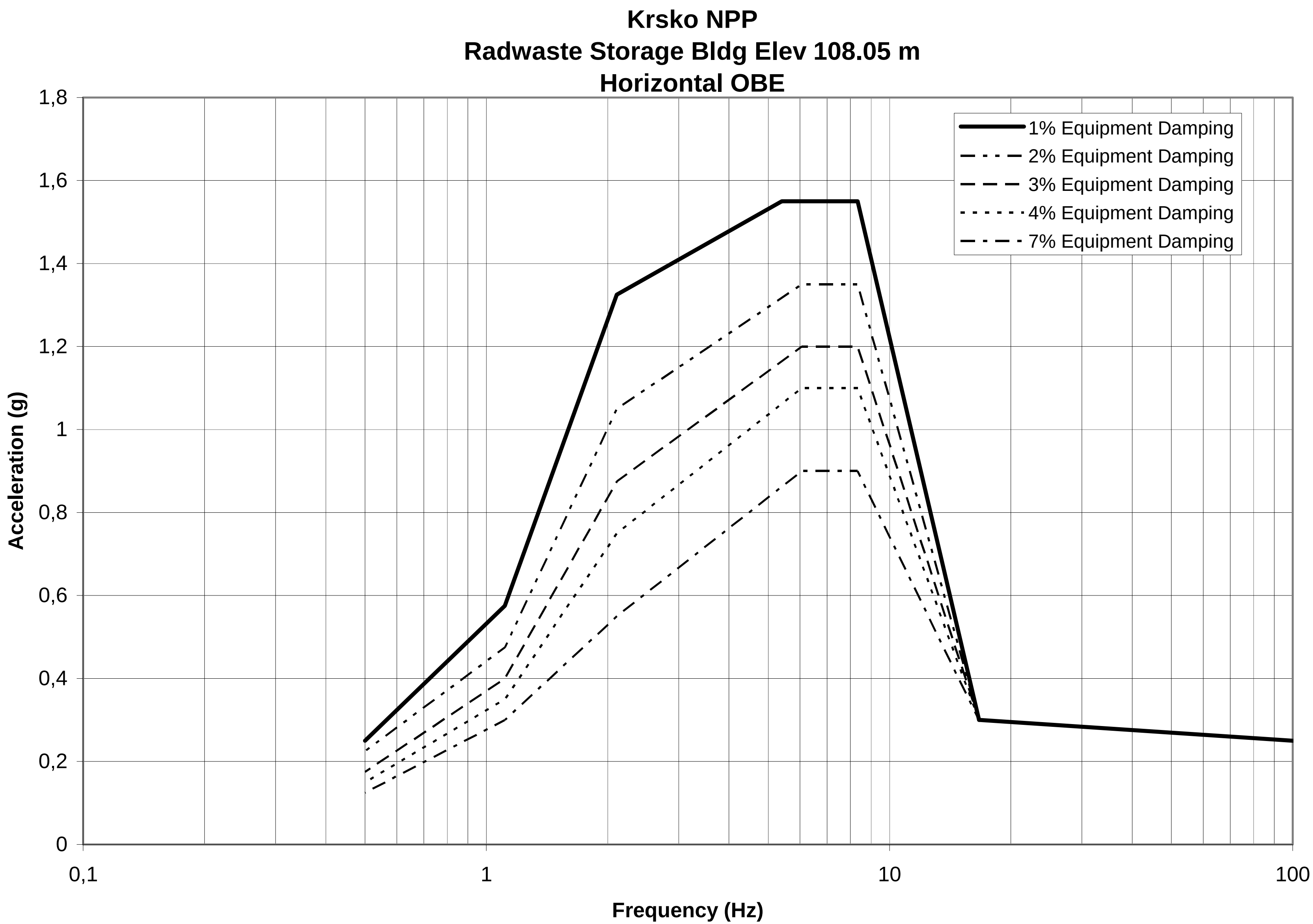

Krsko NPP
Radwaste Storage Bldg. Elev 100.15
Horizontal SSE
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,5
1
1,5
2
2,5
3
3,5
4
0,1
1
10
100
Frequency (Hz)

Figure A130


Krsko NPP
Radwaste Storage Bldg Elev 108.05 m
Horizontal OBE
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
0,2
0,4
0,6
0,8
1
1,2
1,4
1,6
1,8
0,1
1
10
100
Frequency (Hz)

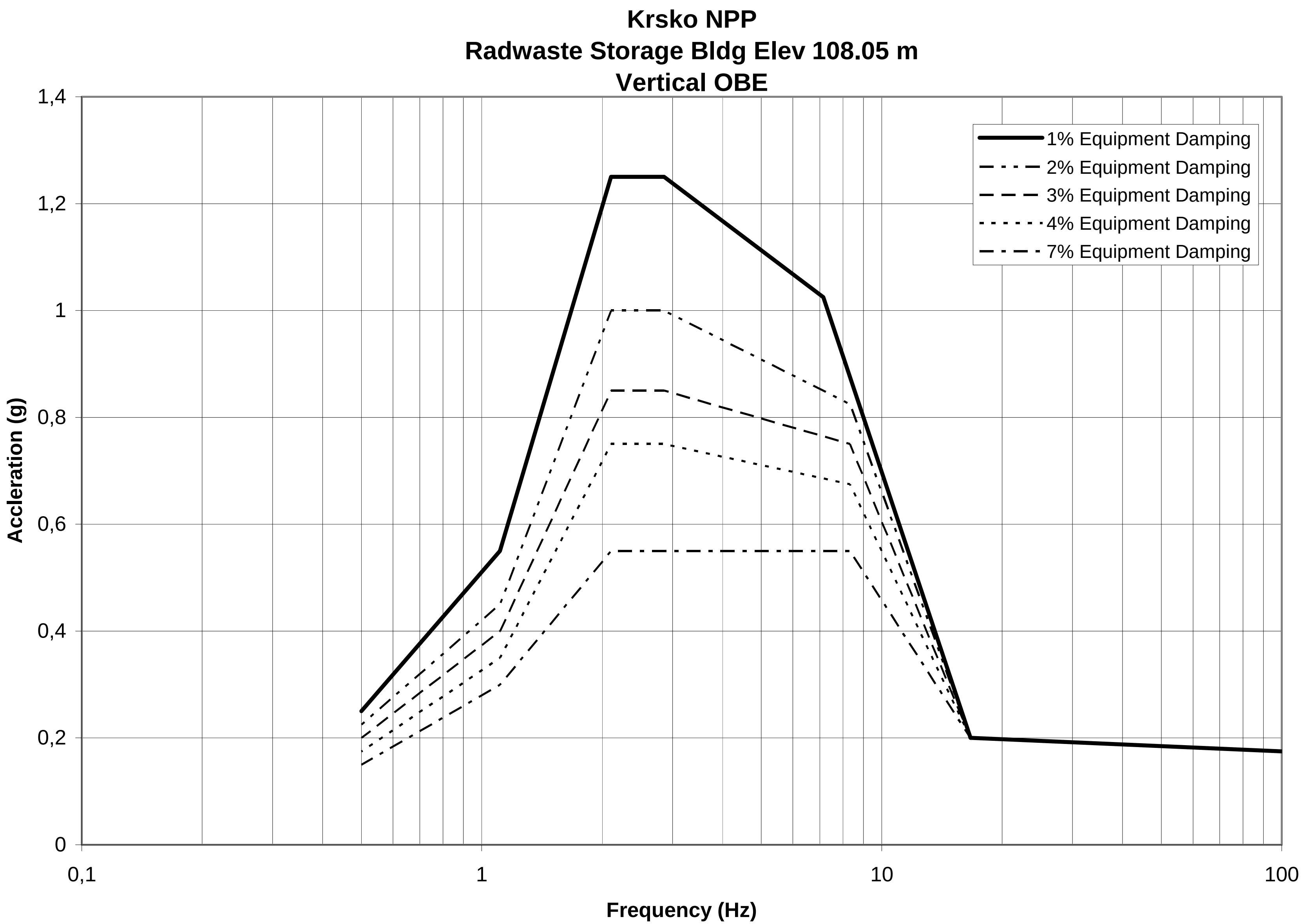

Krsko NPP
Radwaste Storage Bldg Elev 108.05 m
Vertical OBE
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Accleration (g)
1,4
1,2
1
0,8
0,6
0,4
0,2
0
0,1
1
10
100
Frequency (Hz)

Figure A132

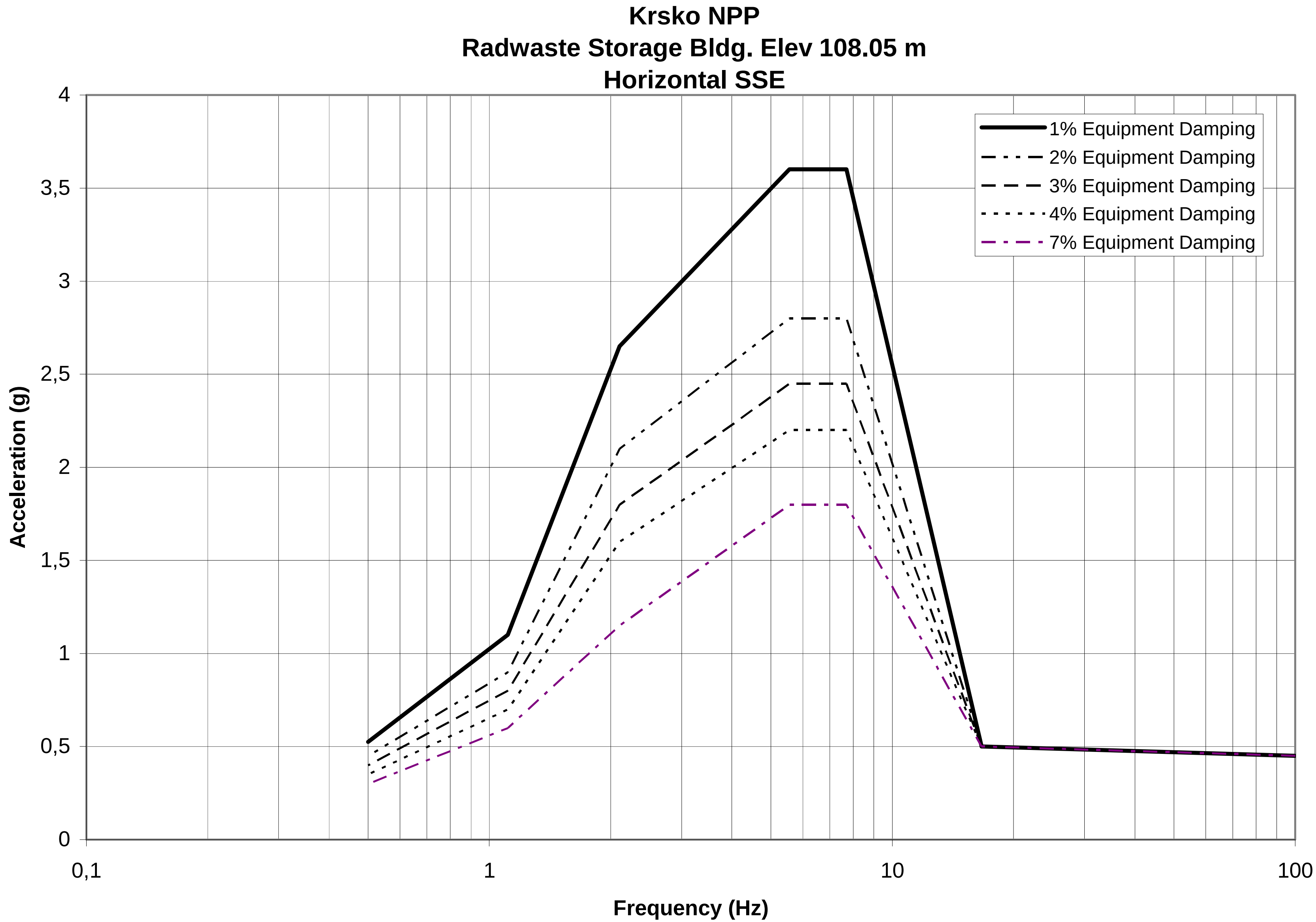

Krsko NPP
Radwaste Storage Bldg. Elev 108.05 m
Horizontal SSE
Acceleration (g)
Frequency (Hz)
0
0,5
1
1,5
2
2,5
3
3,5
4
0,1
1
10
100
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A133

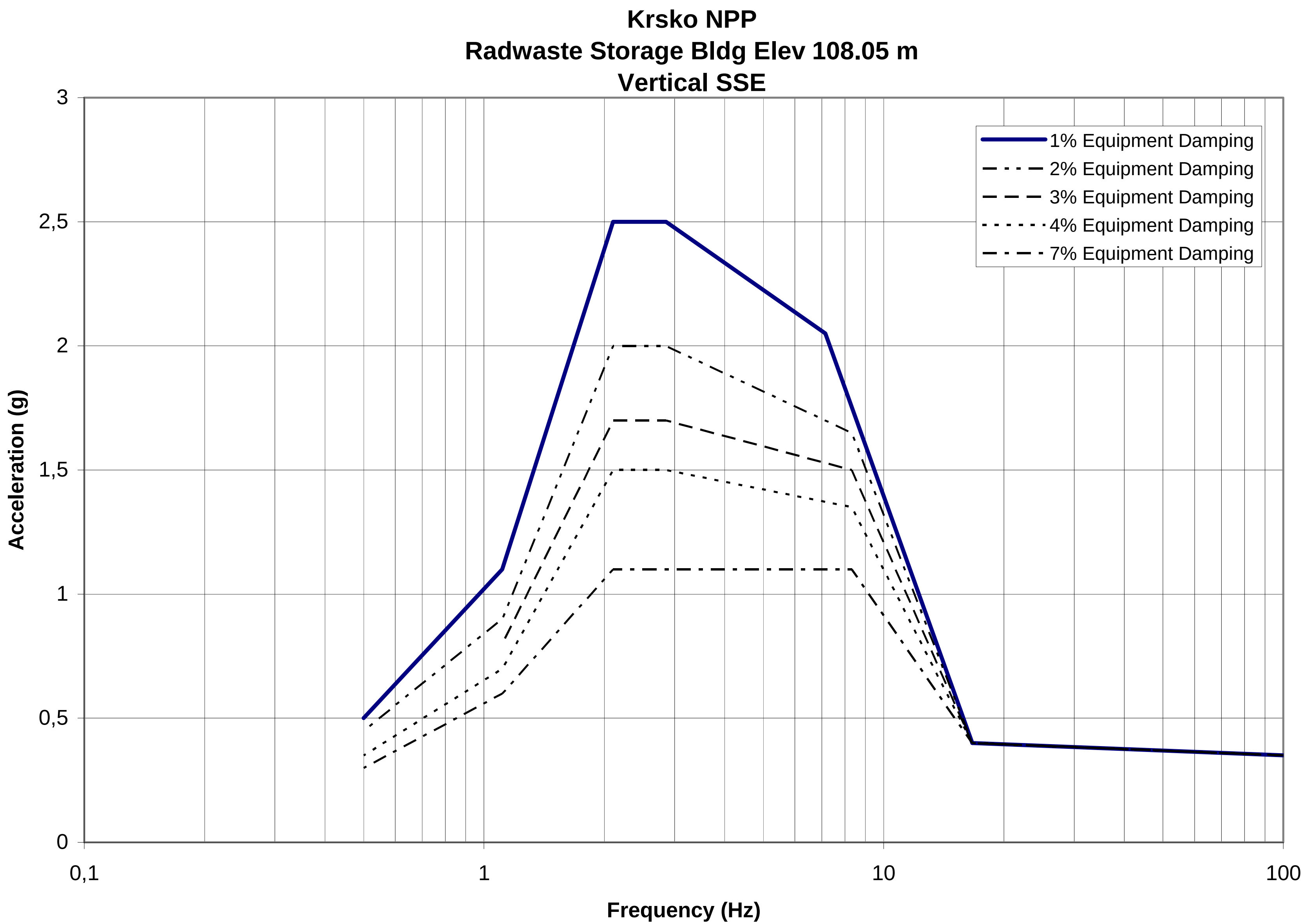

Krsko NPP
Radwaste Storage Bldg Elev 108.05 m
Vertical SSE
Acceleration (g)
Frequency (Hz)
3
2,5
2
1,5
1
0,5
0
0,1
1
10
100
1% Equipment Damping
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A134

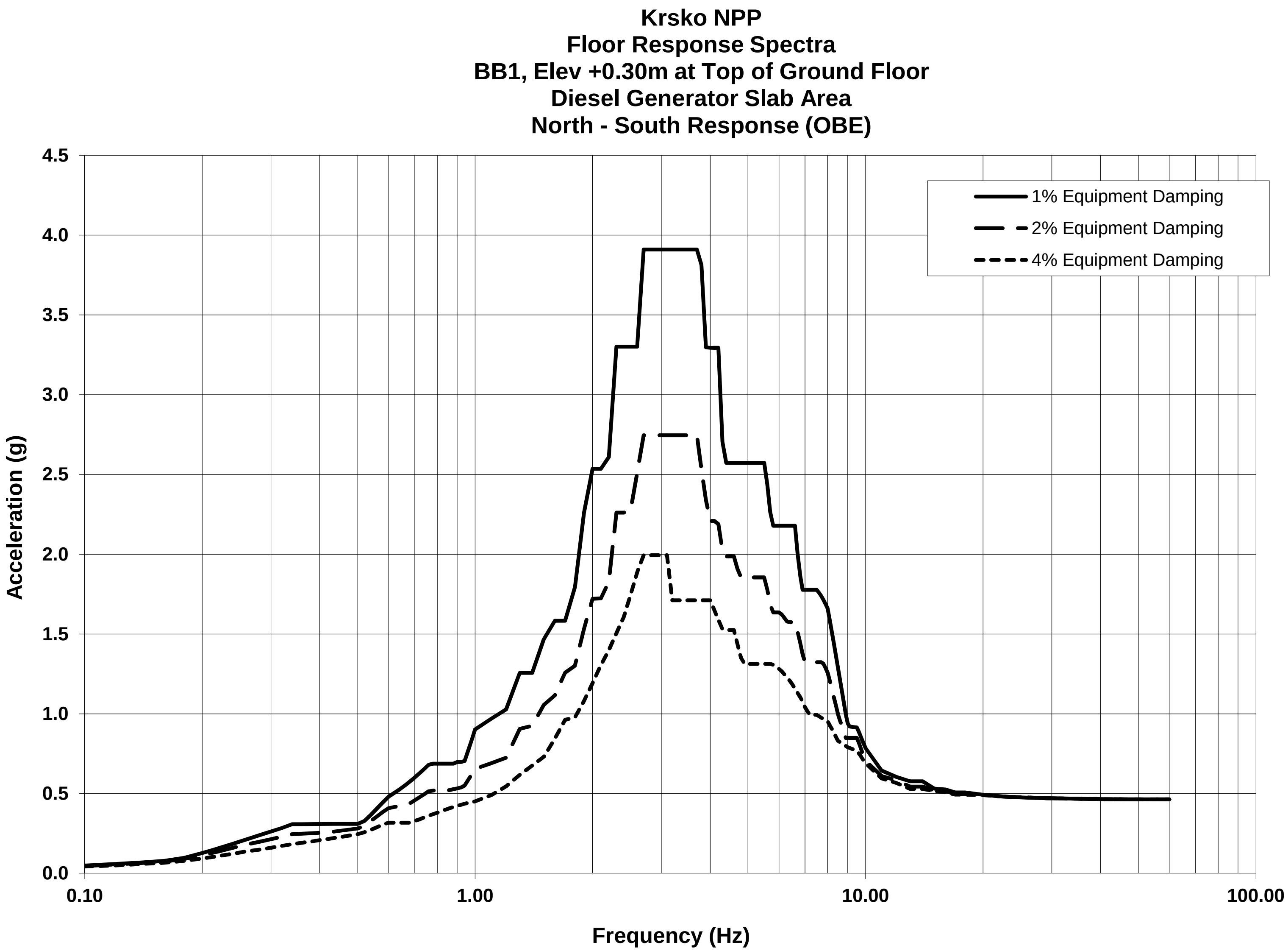
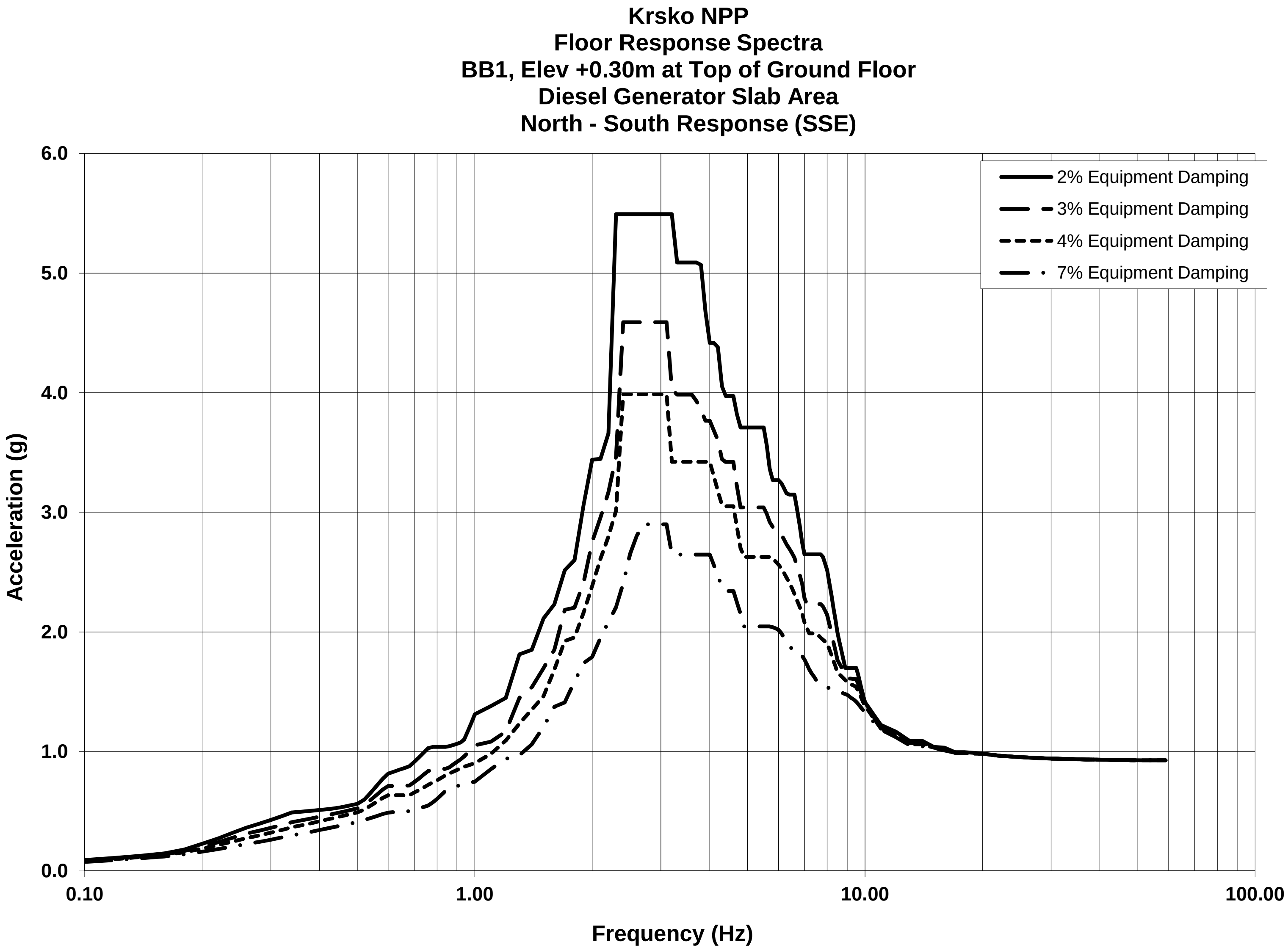
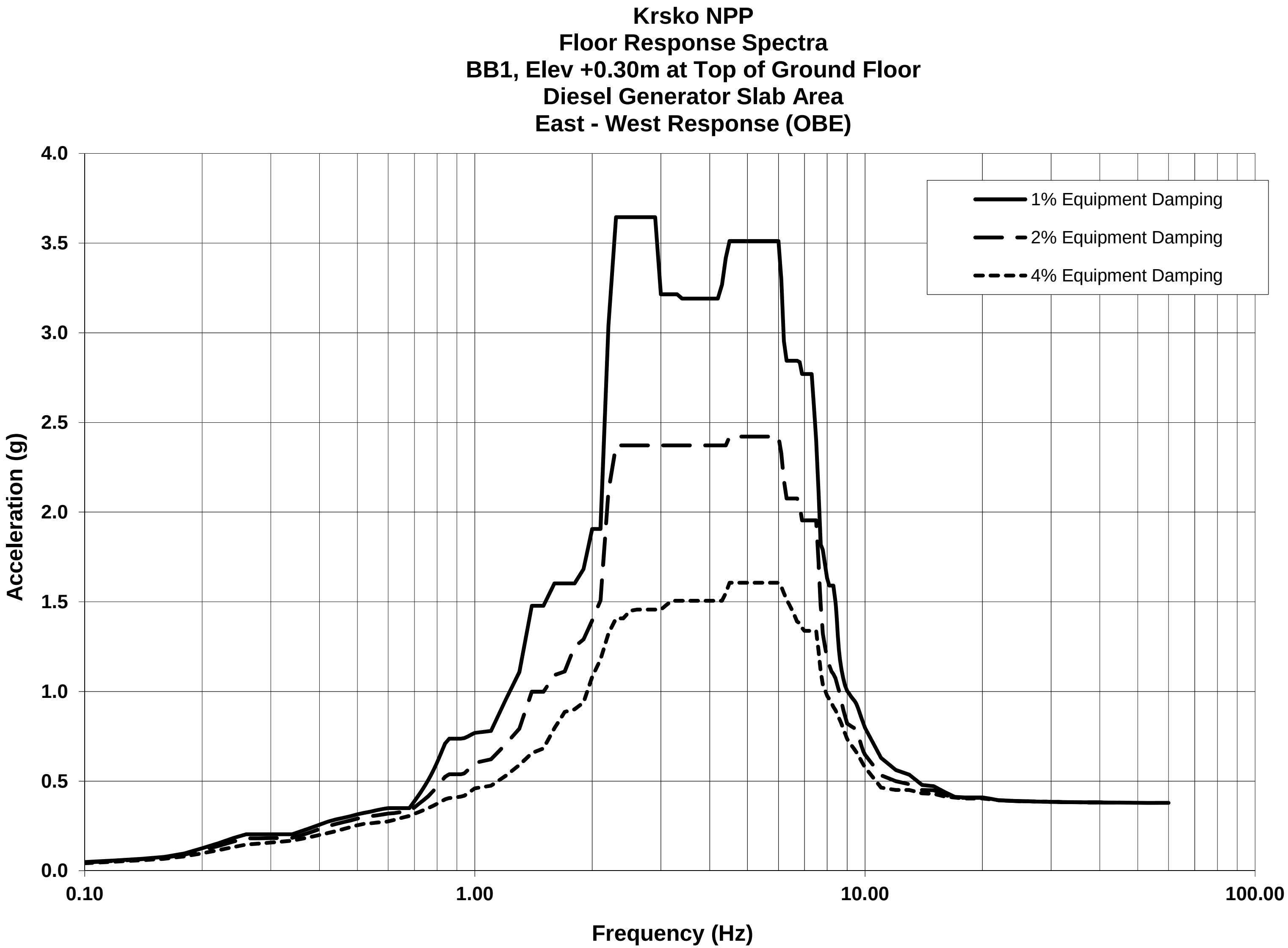
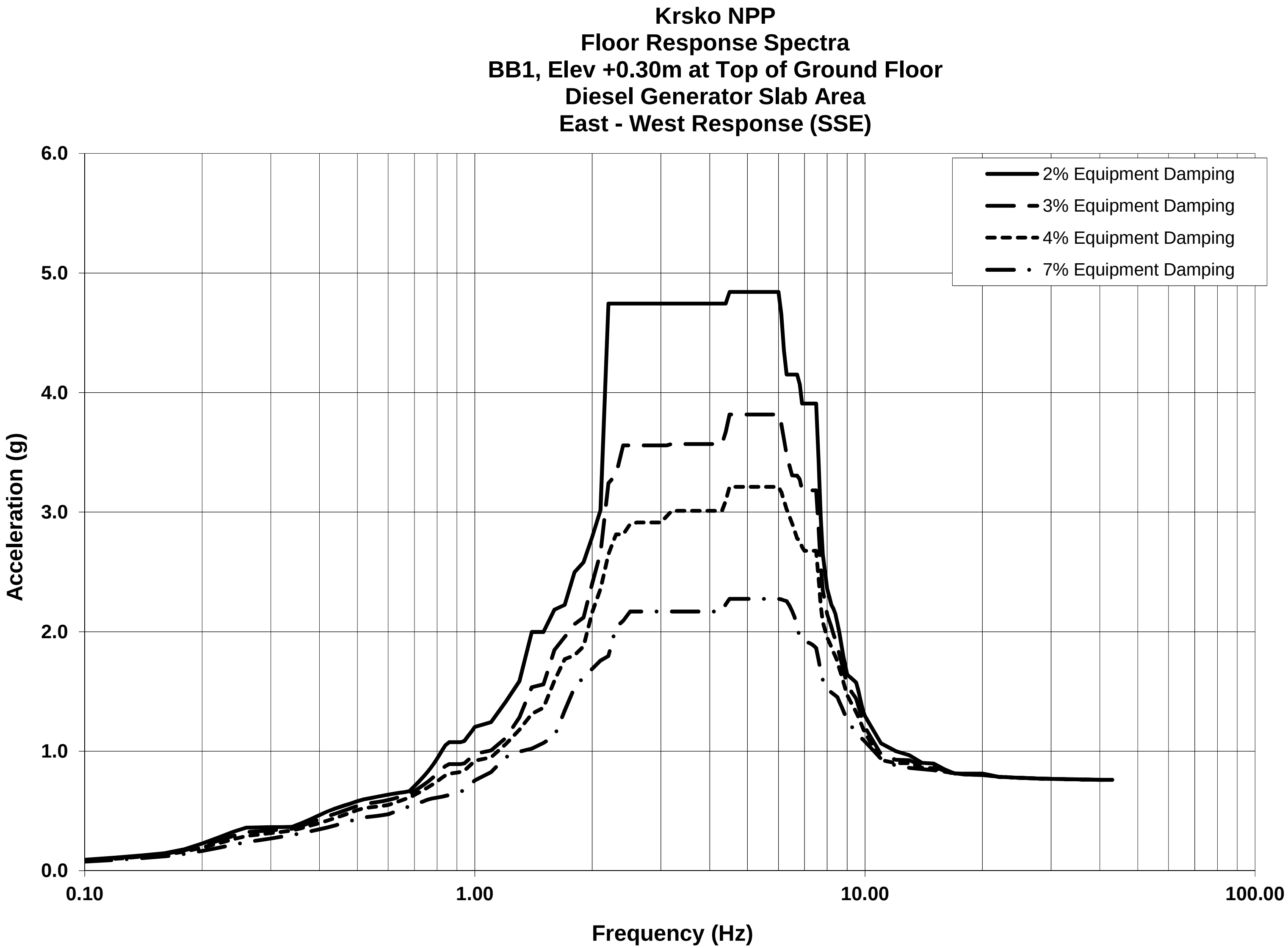

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
North - South Response (OBE)
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

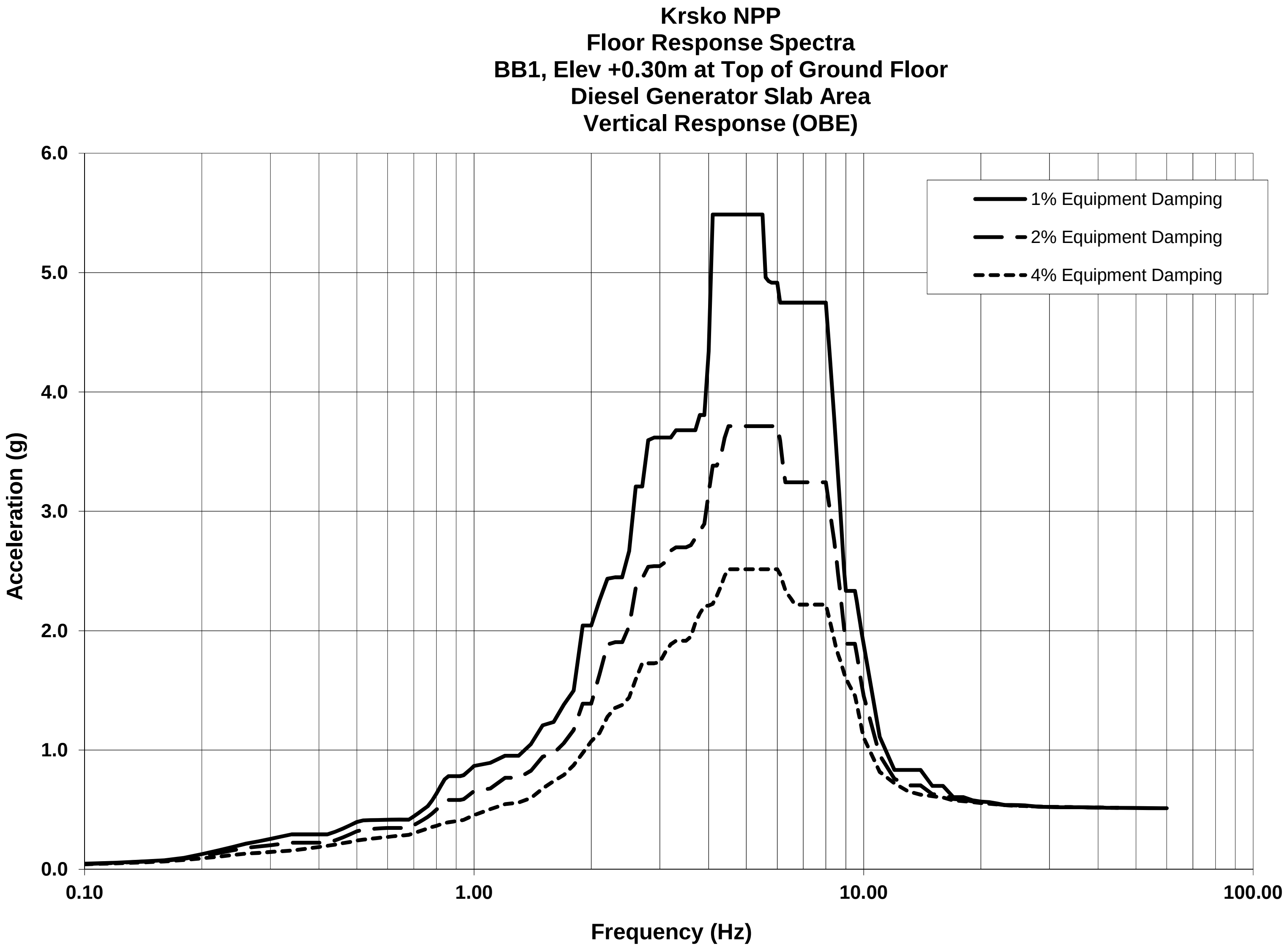
Figure A135

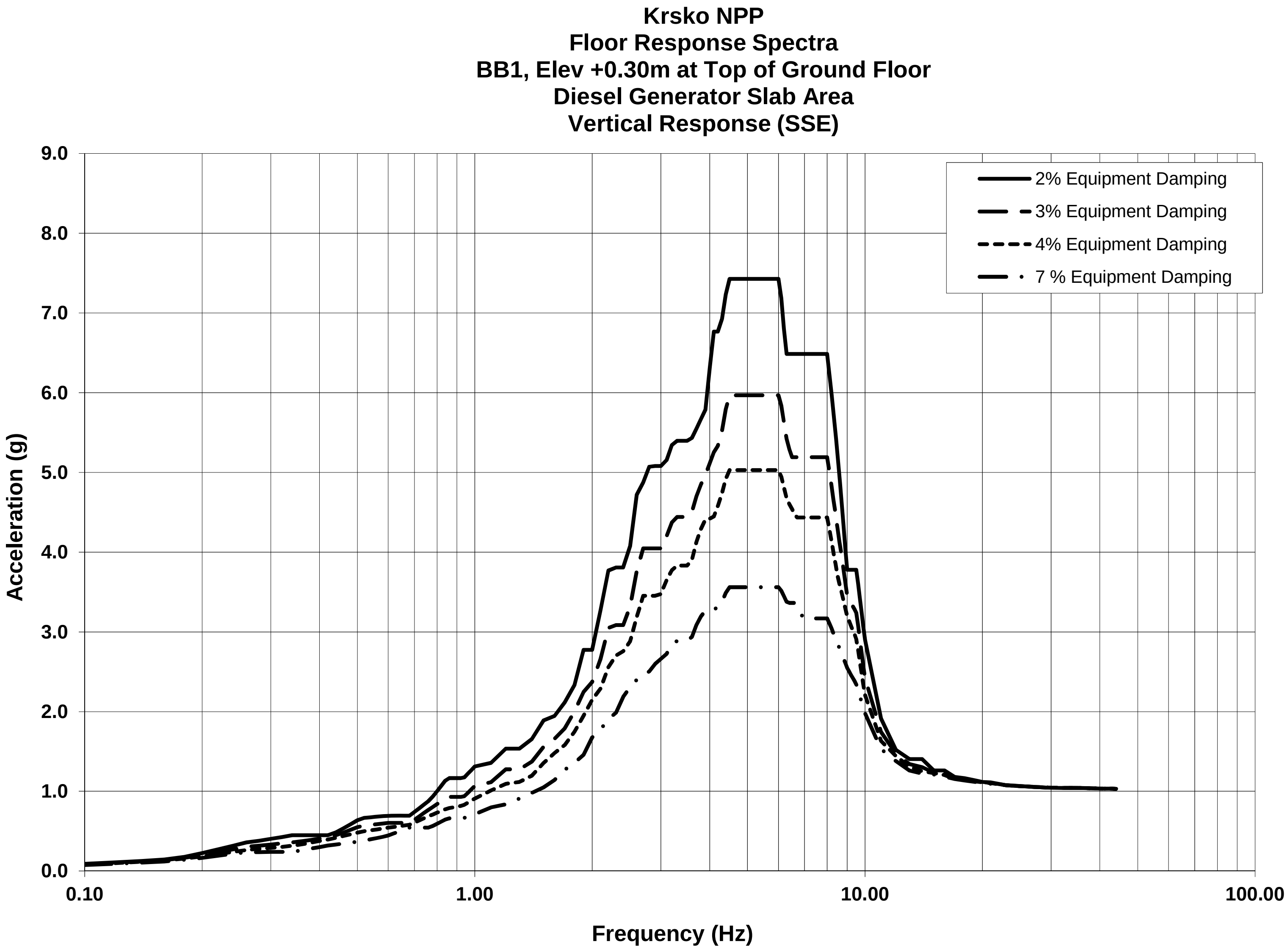

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
North - South Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)

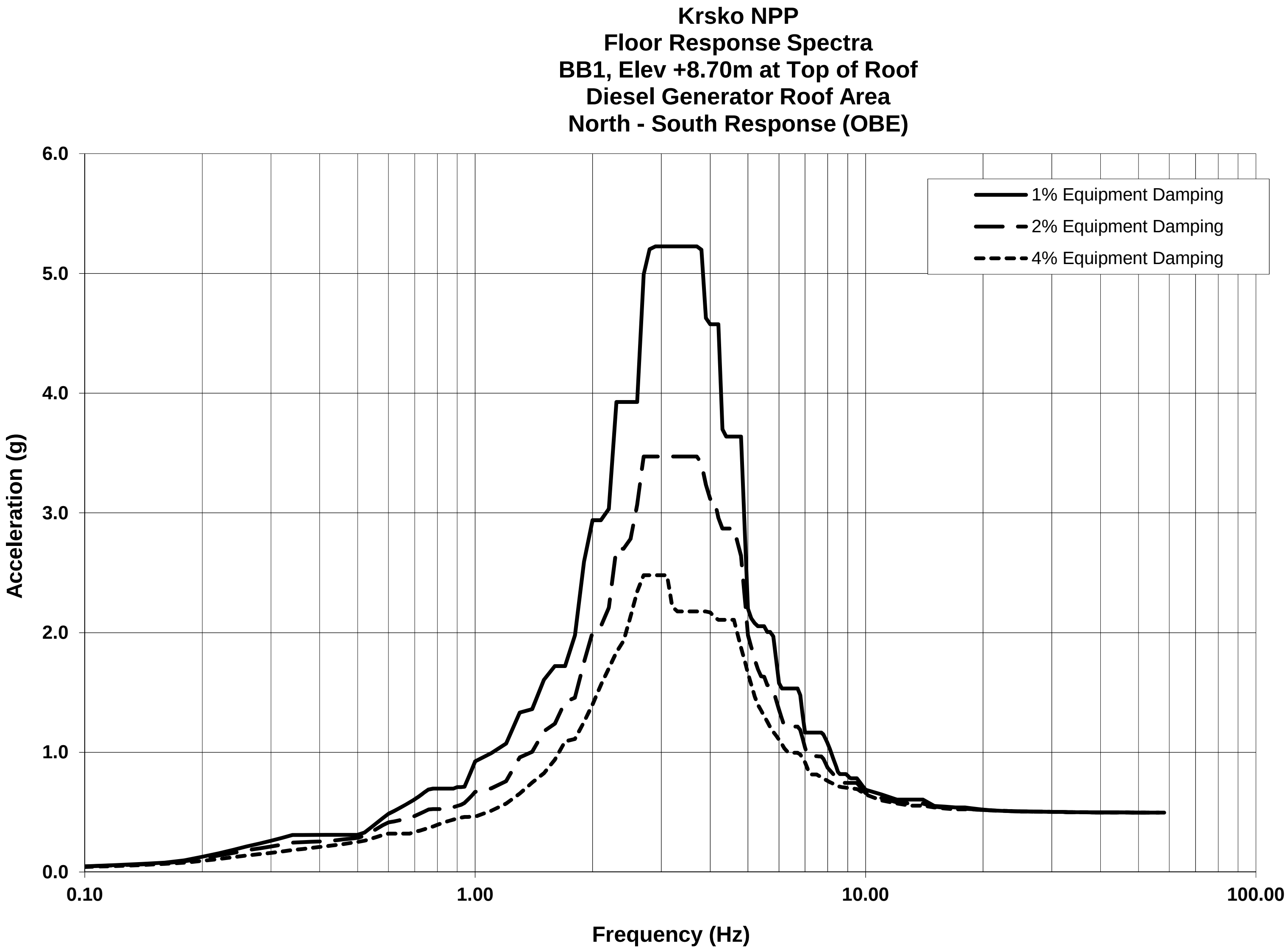

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
East - West Response (OBE)
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.10
1.00
10.00
100.00
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

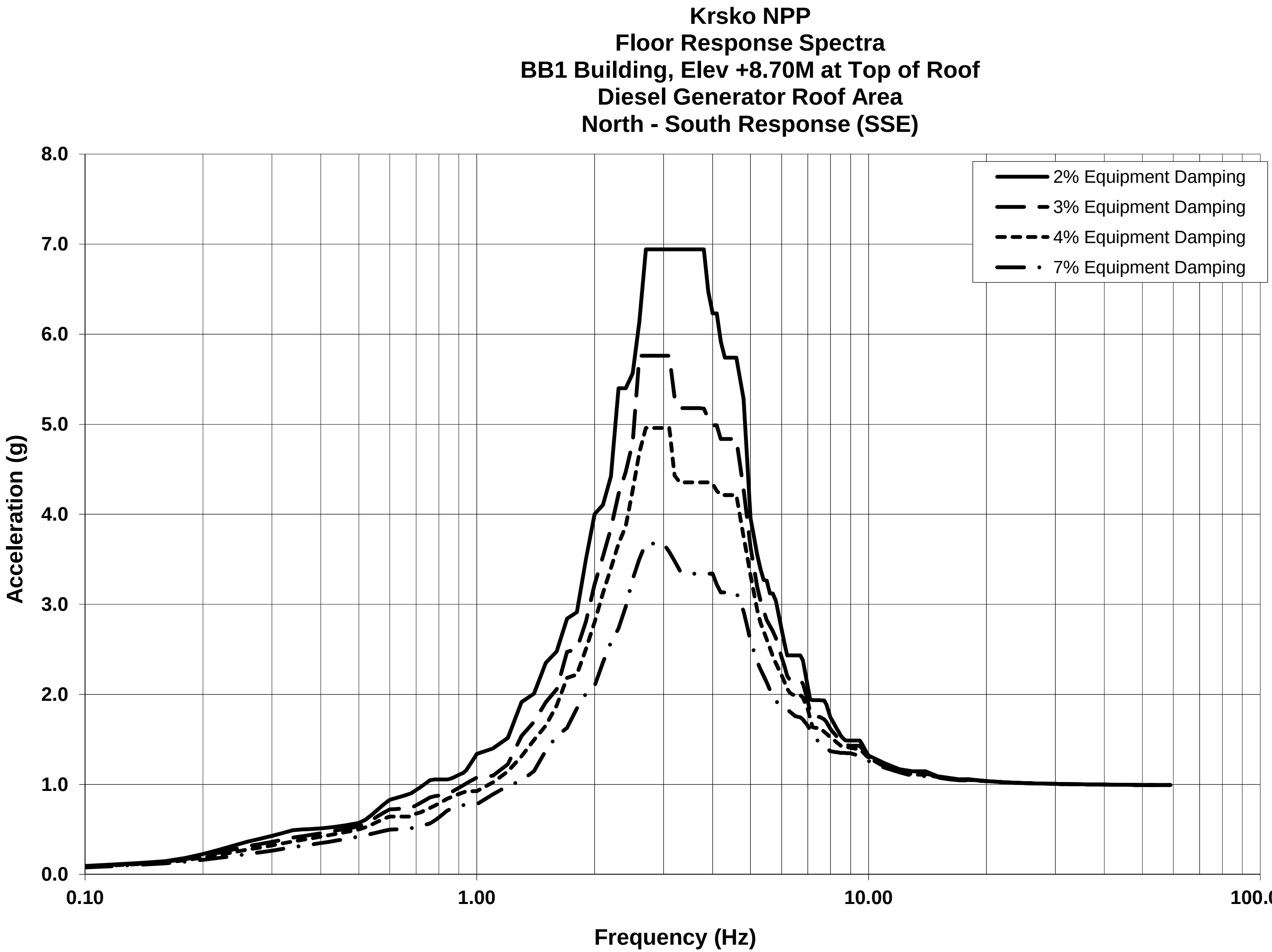


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
East - West Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
Vertical Response (OBE)
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Diesel Generator Slab Area
Vertical Response (SSE)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Diesel Generator Roof Area
North - South Response (OBE)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.10
1.00
10.00
100.00
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1 Building, Elev +8.70M at Top of Roof
Diesel Generator Roof Area
North - South Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Diesel Generator Roof Area
East - West Response (OBE)

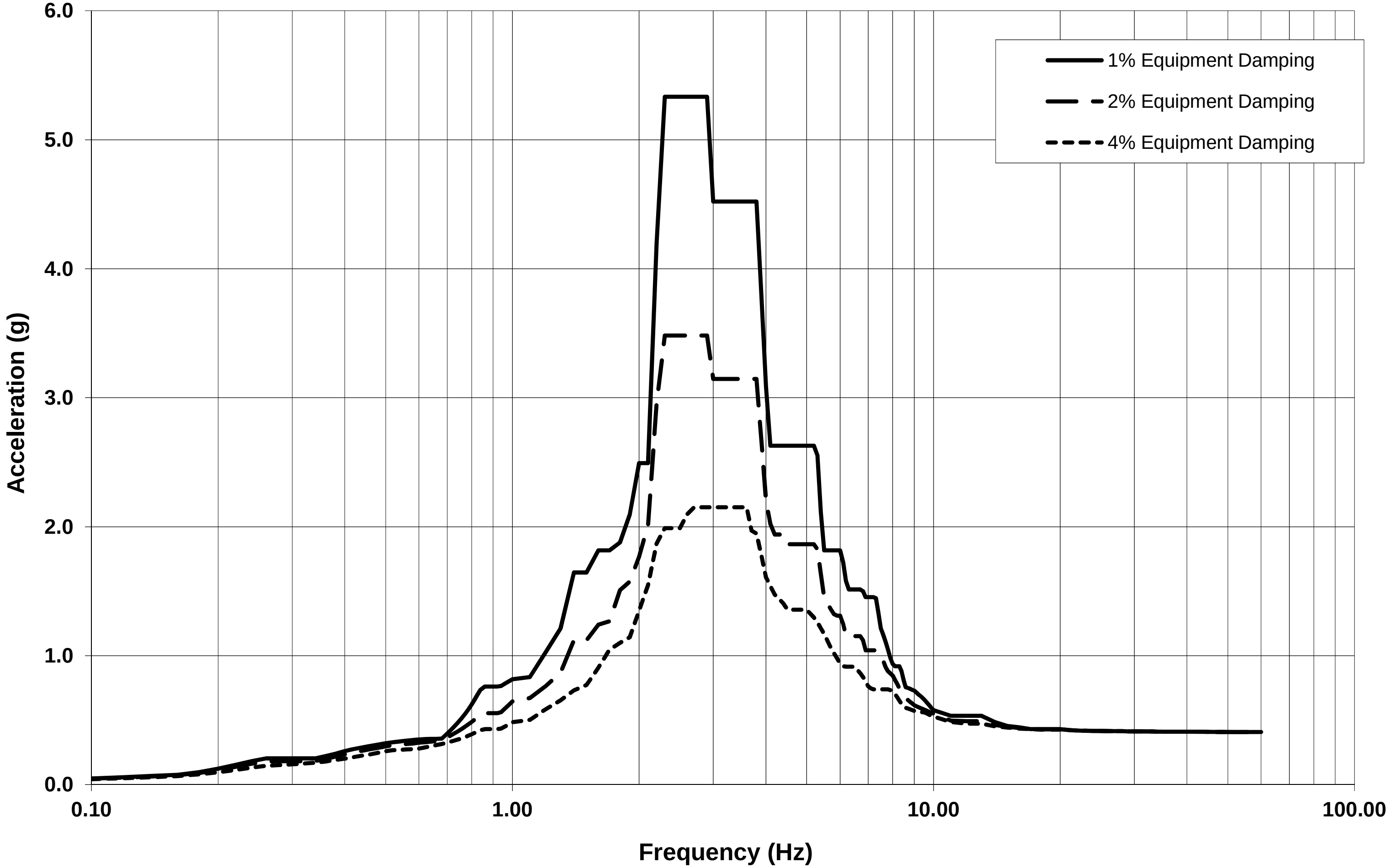


Figure A143

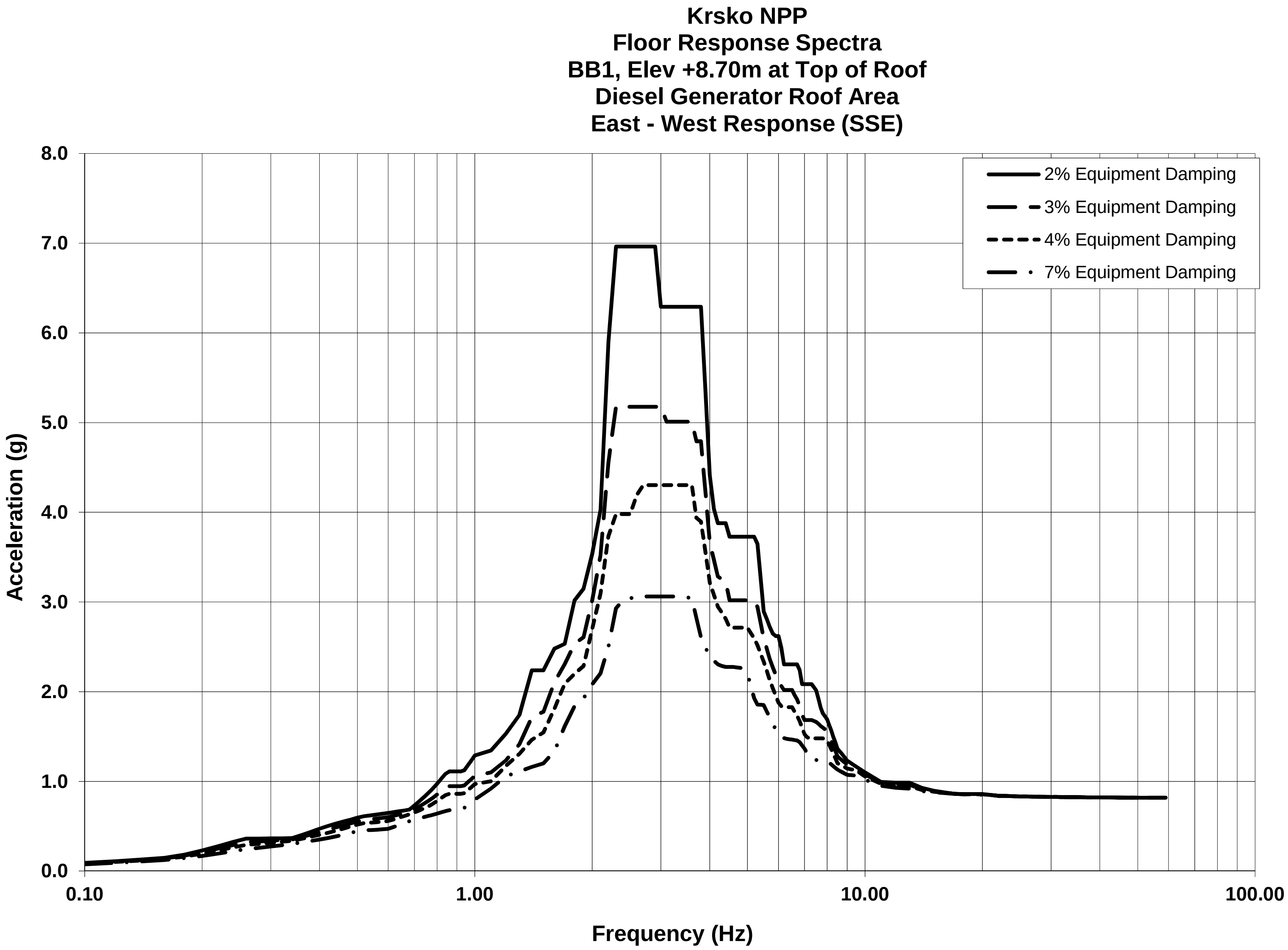
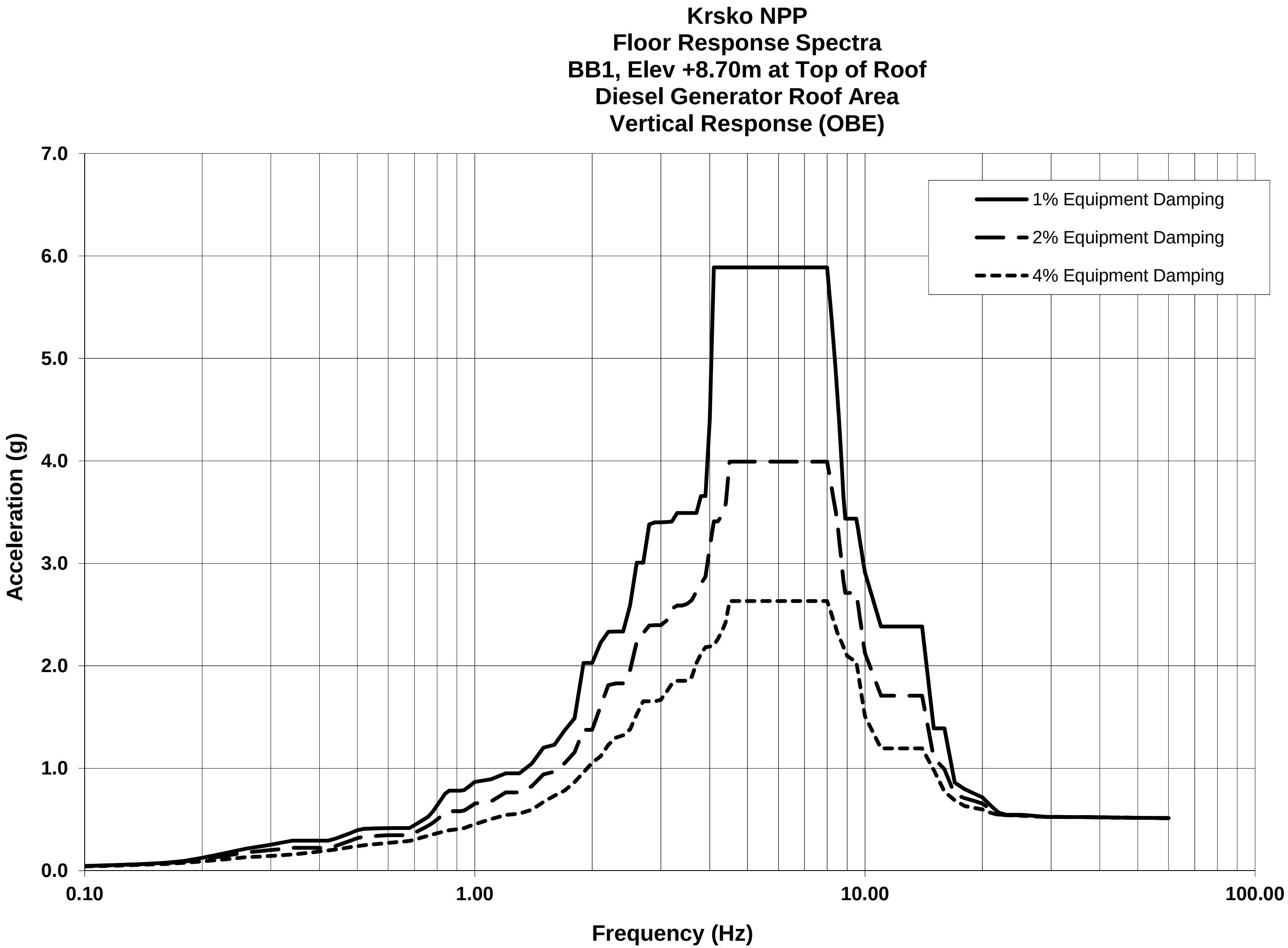
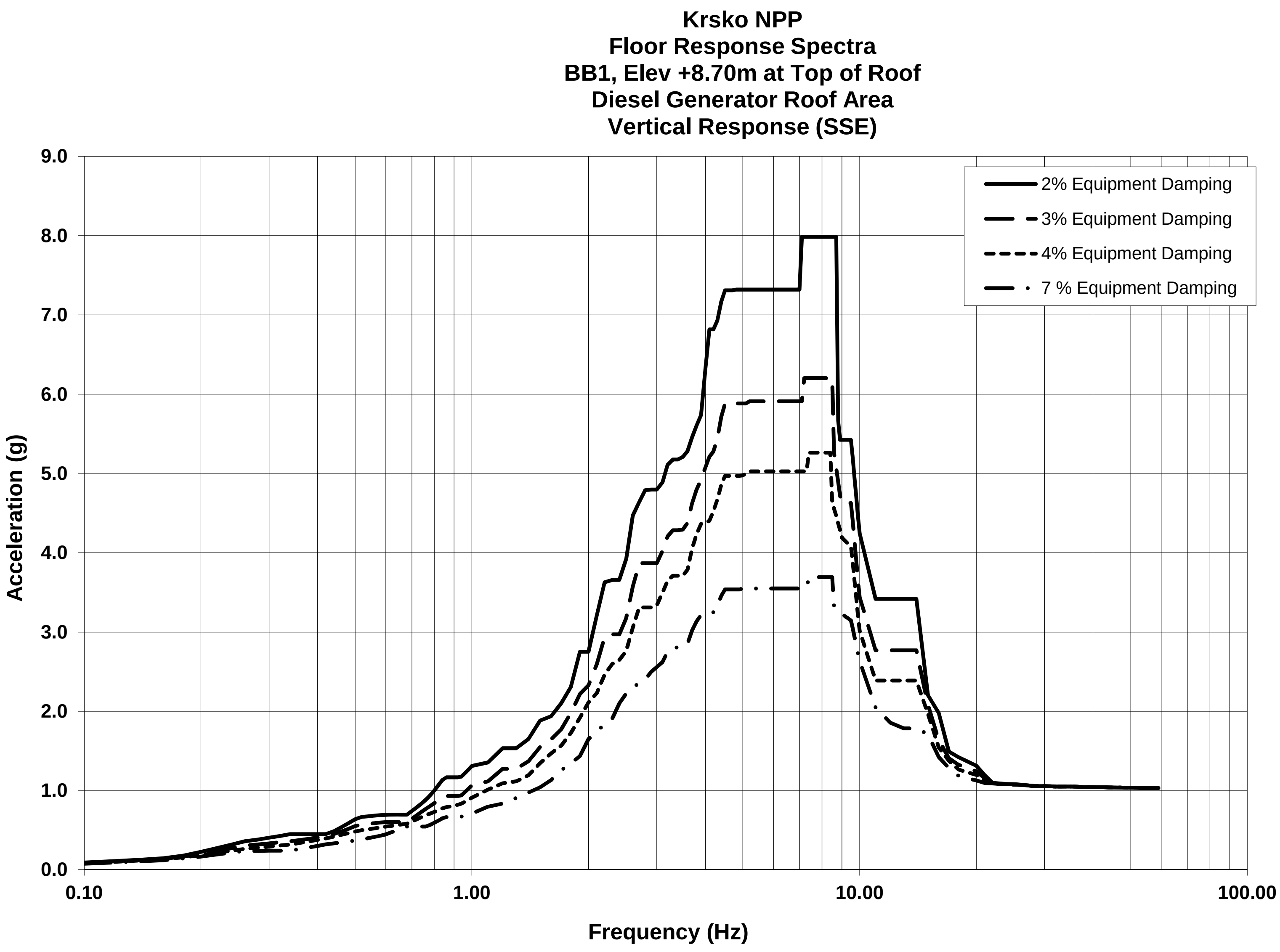
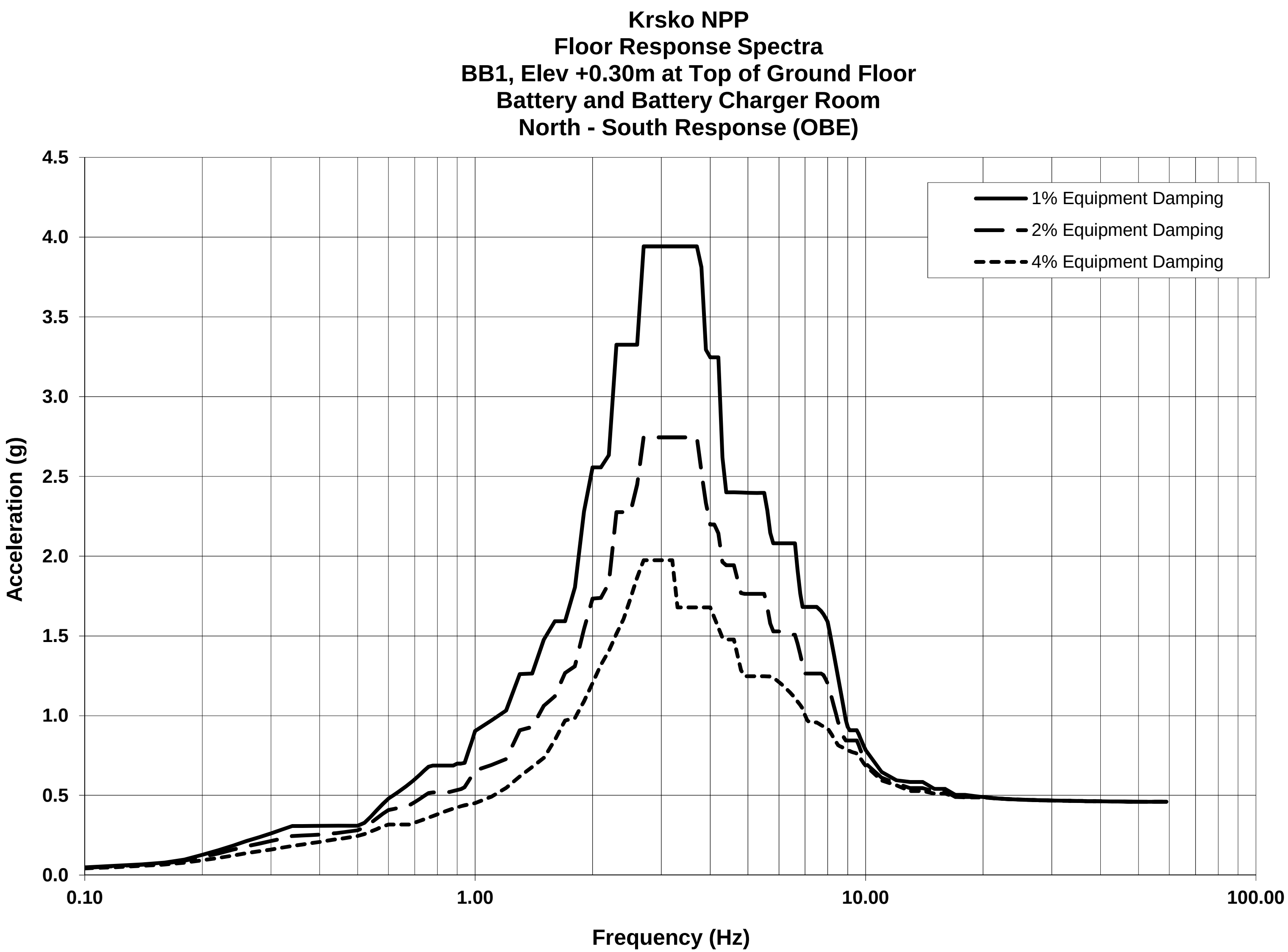

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Diesel Generator Roof Area
East - West Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.10
1.00
10.00
100.00

Figure A144


Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Diesel Generator Roof Area
Vertical Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)


Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Diesel Generator Roof Area
Vertical Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Battery and Battery Charger Room
North - South Response (OBE)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.10
1.00
10.00
100.00

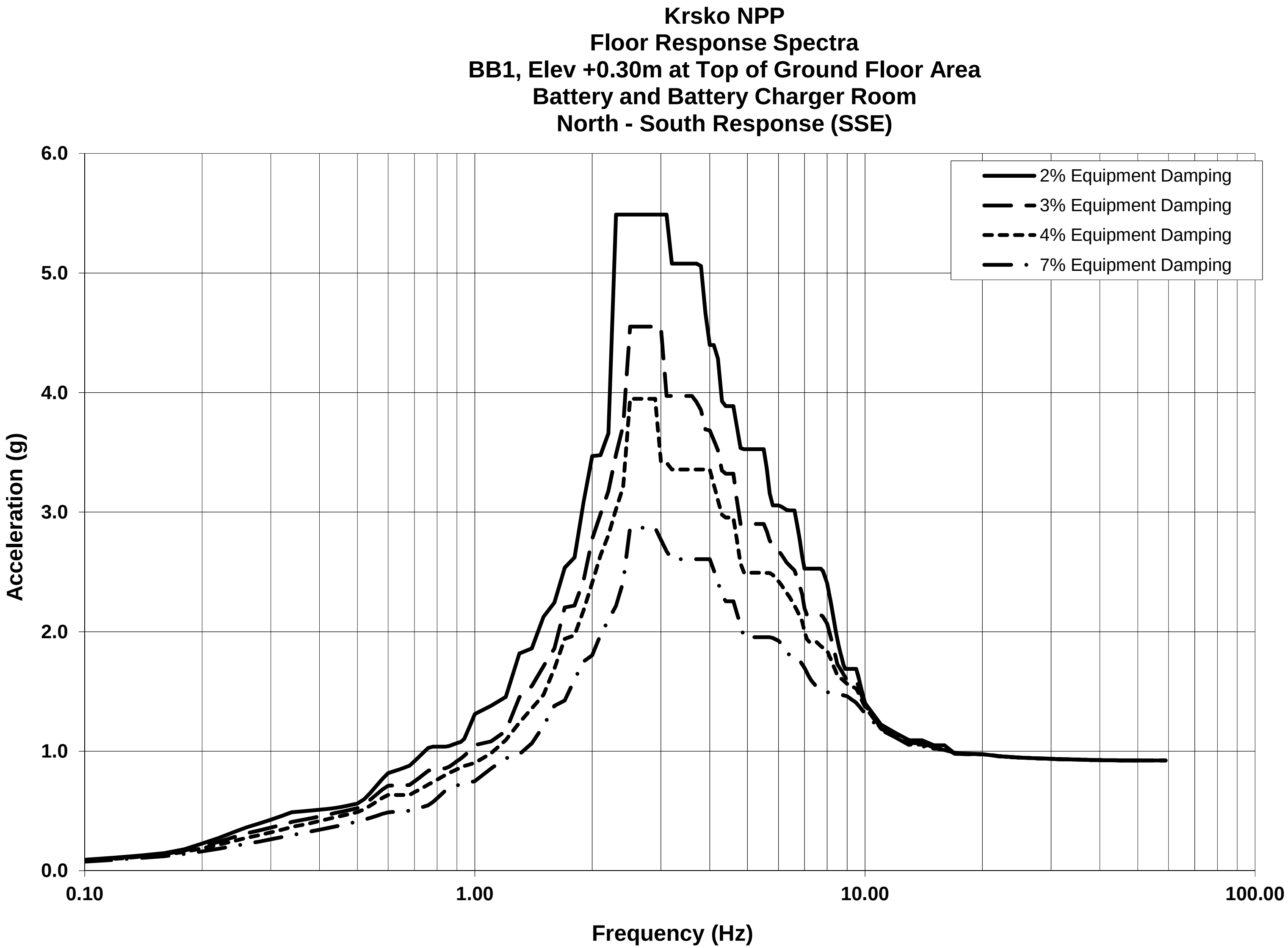

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor Area
Battery and Battery Charger Room
North - South Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)

Figure A148

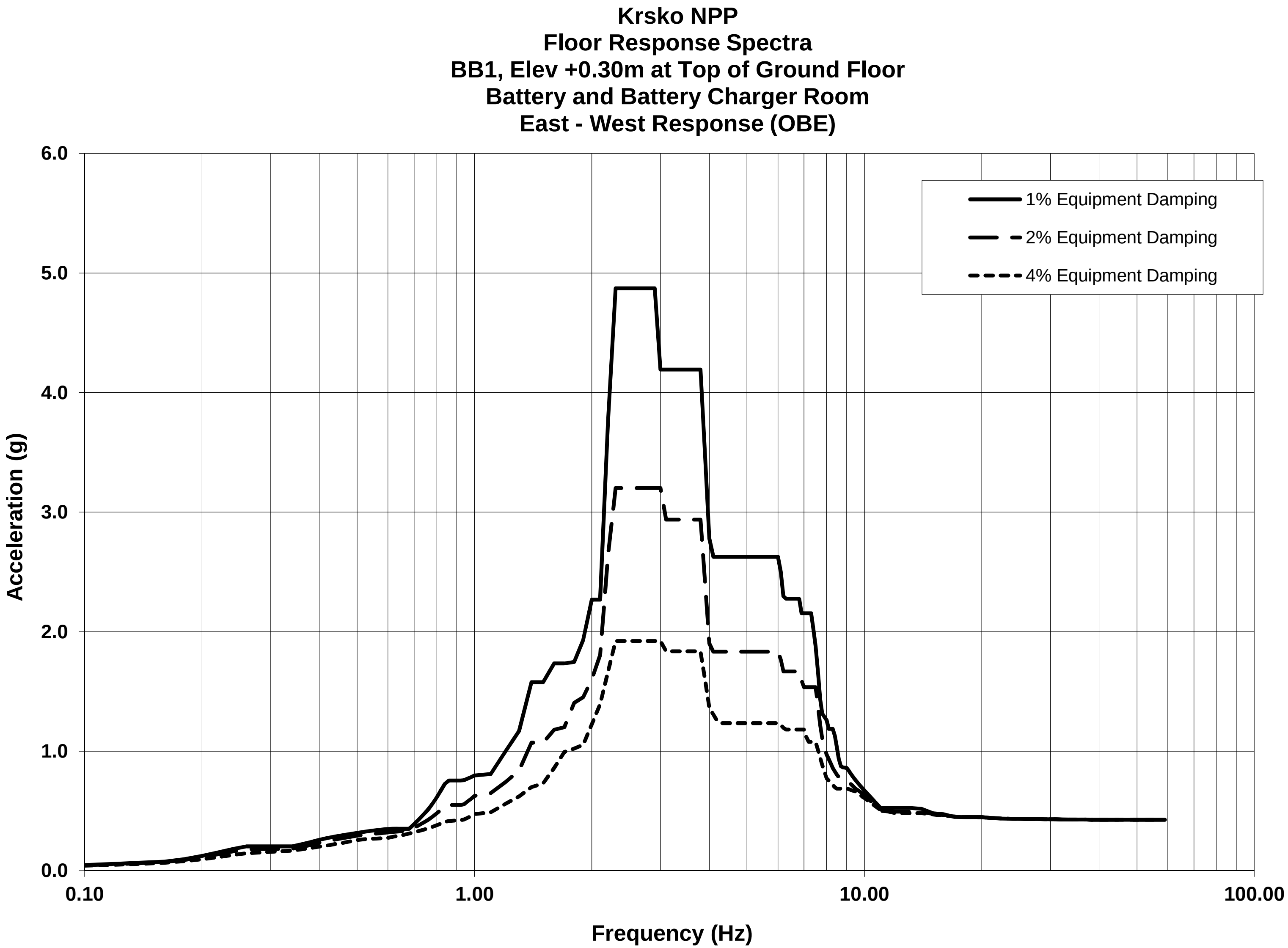
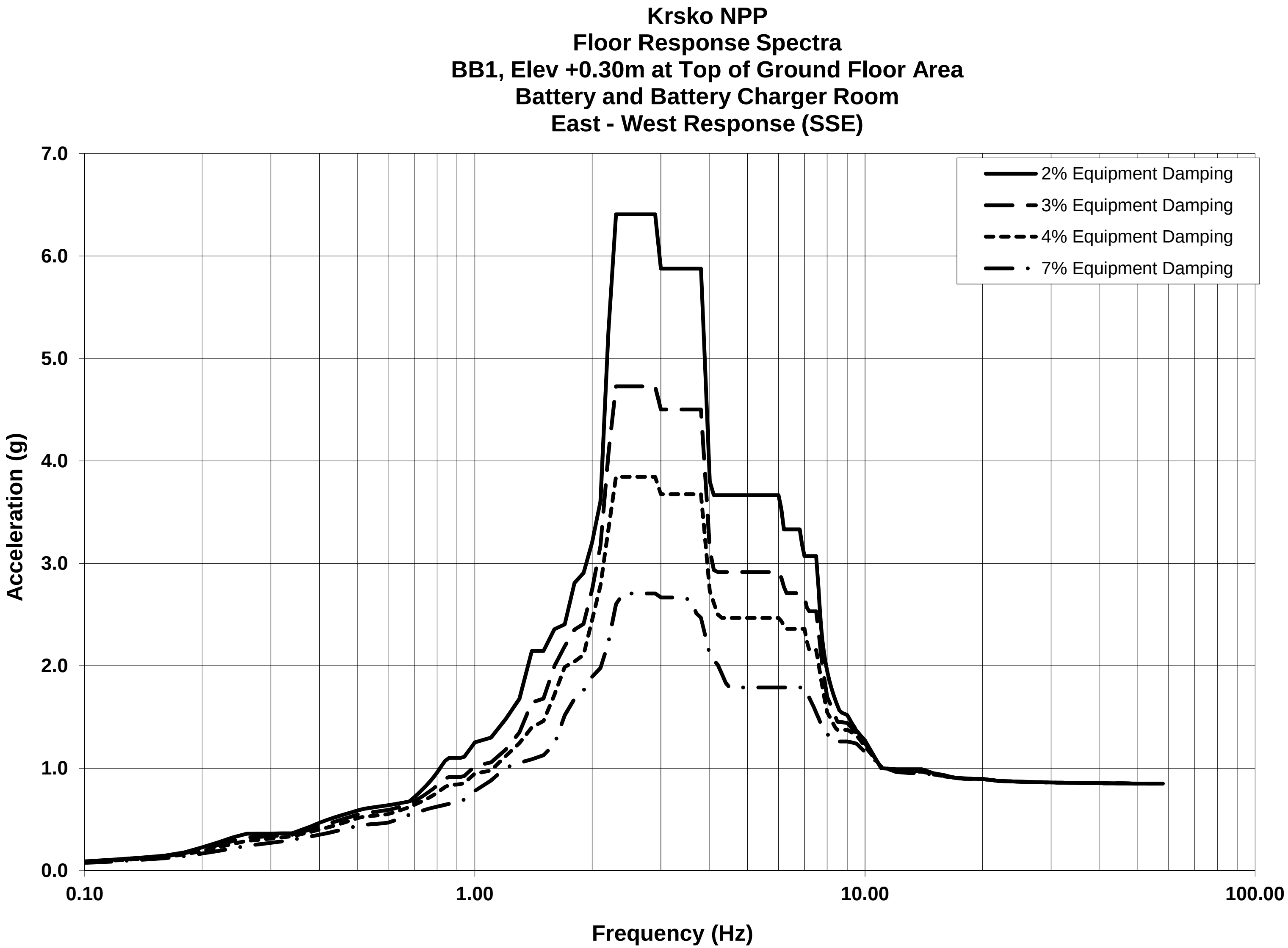
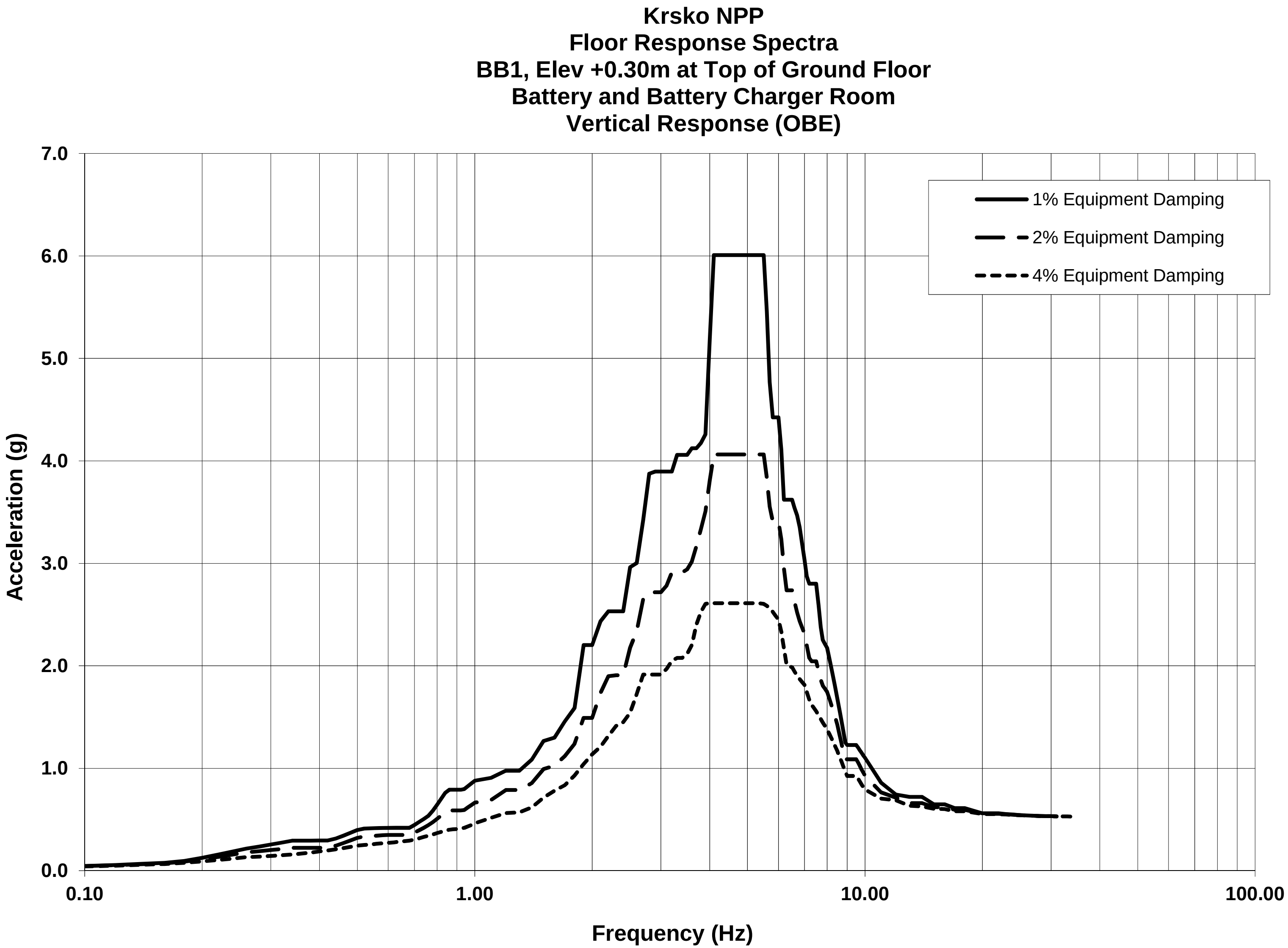

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Battery and Battery Charger Room
East - West Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)

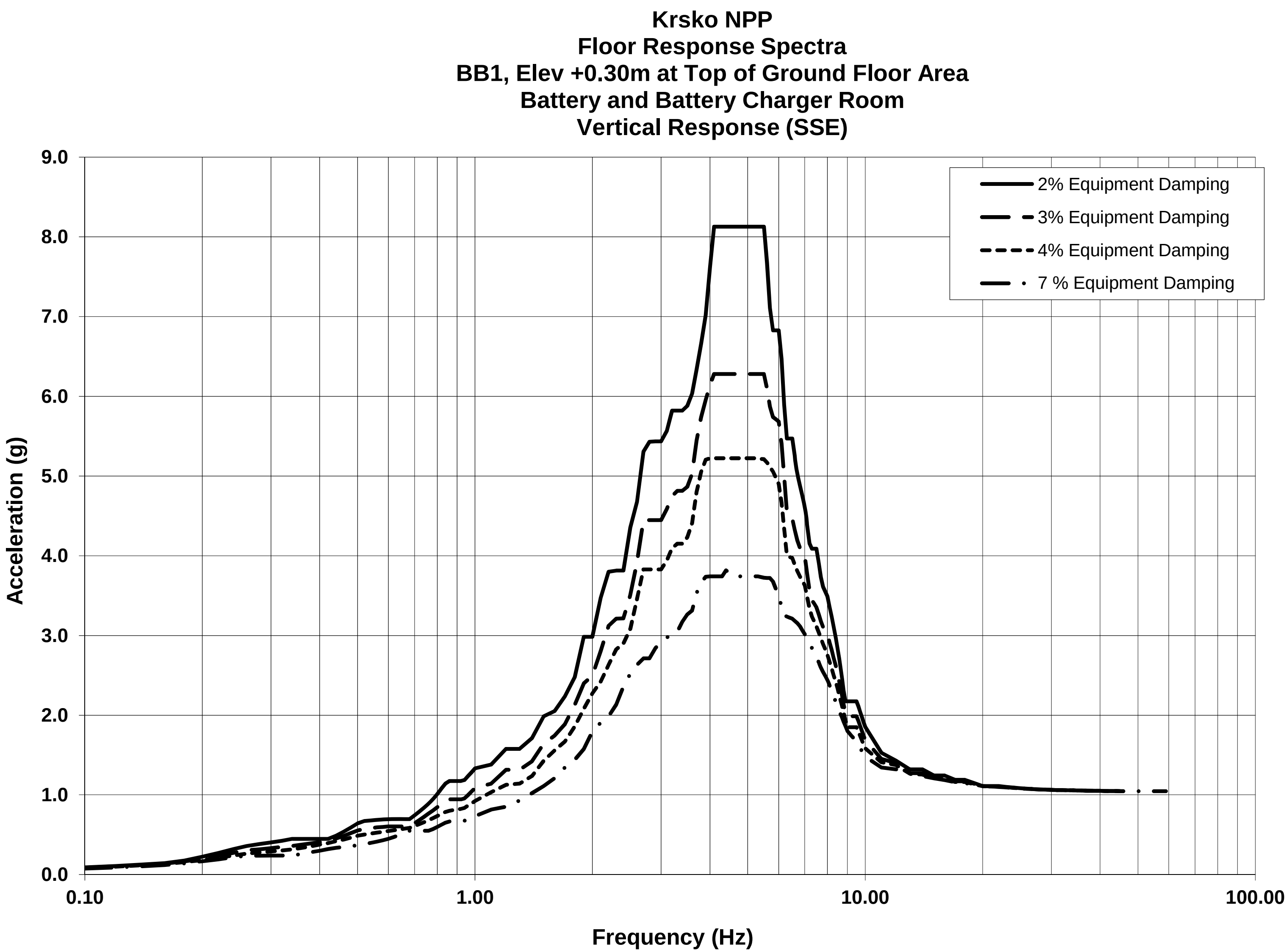
Figure A149

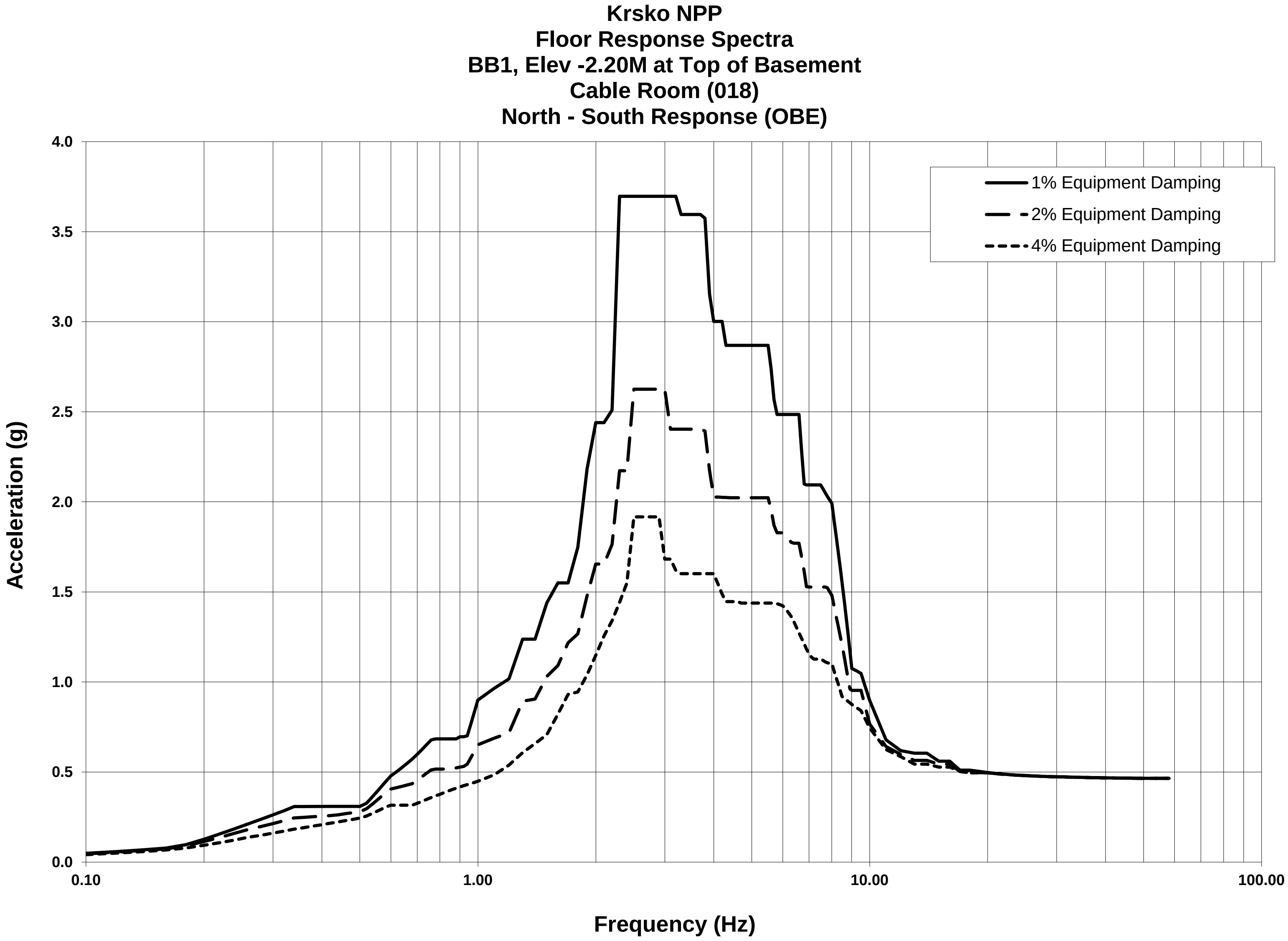


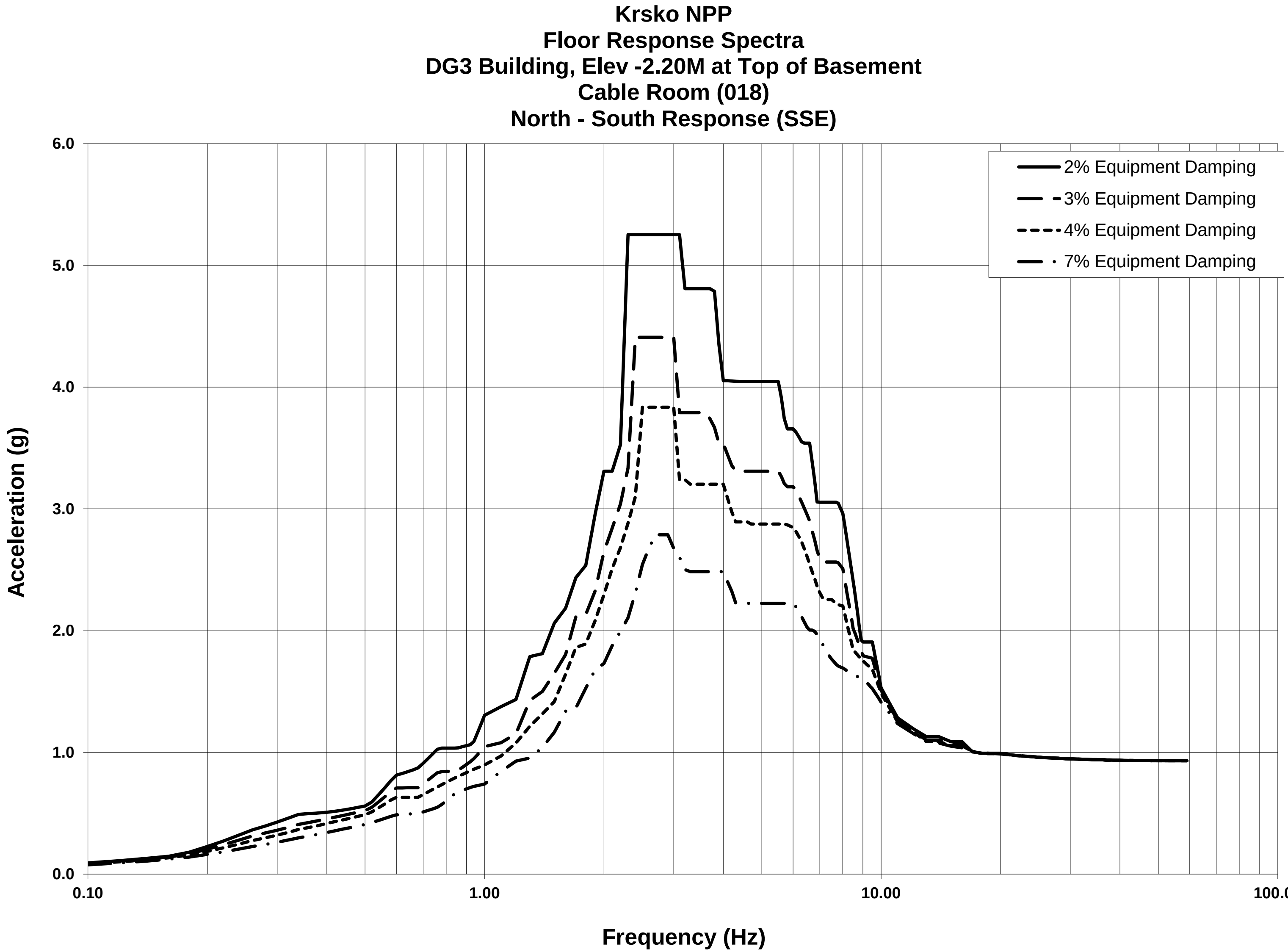
Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor Area
Battery and Battery Charger Room
East - West Response (SSE)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

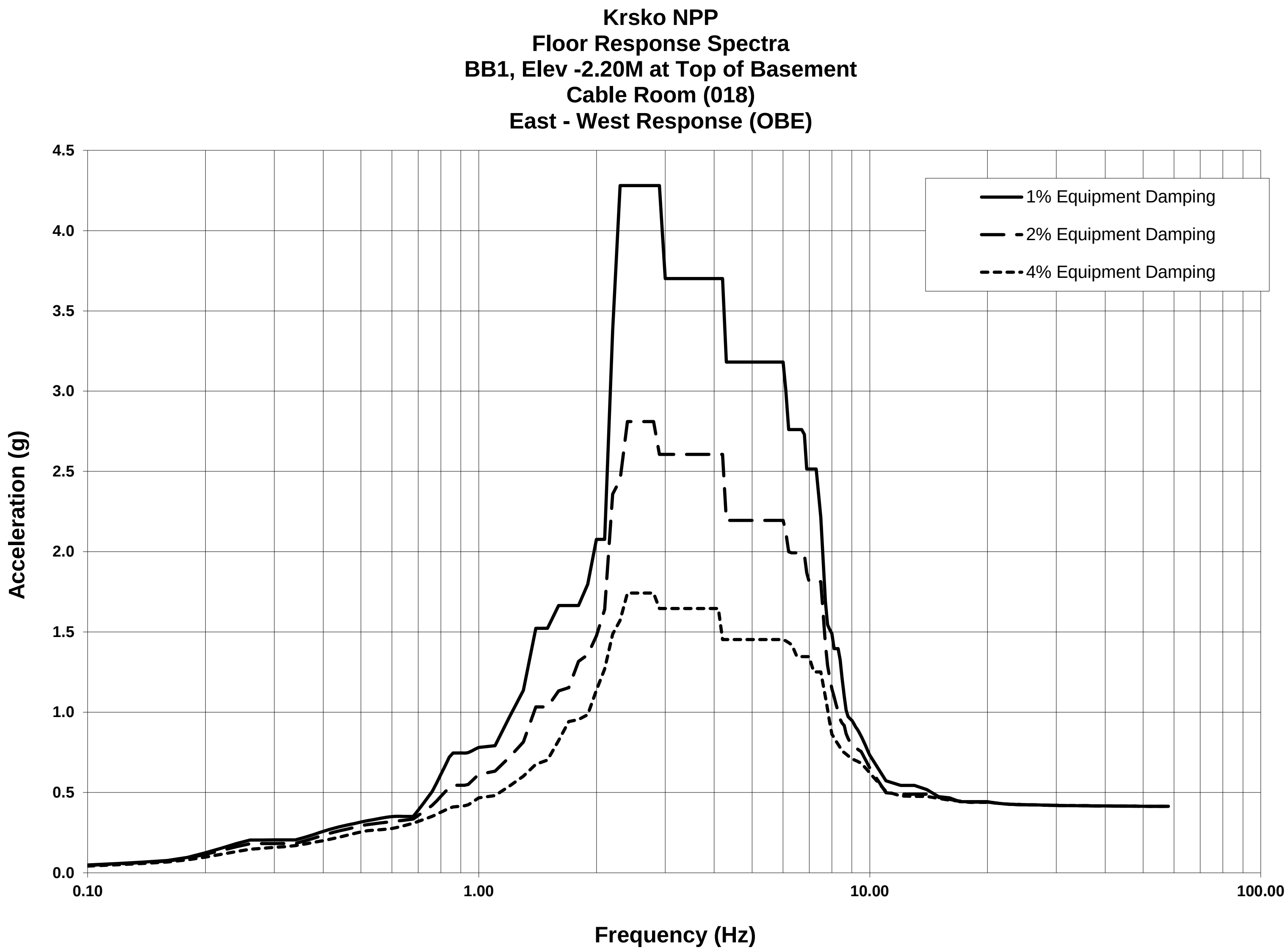
Figure A150

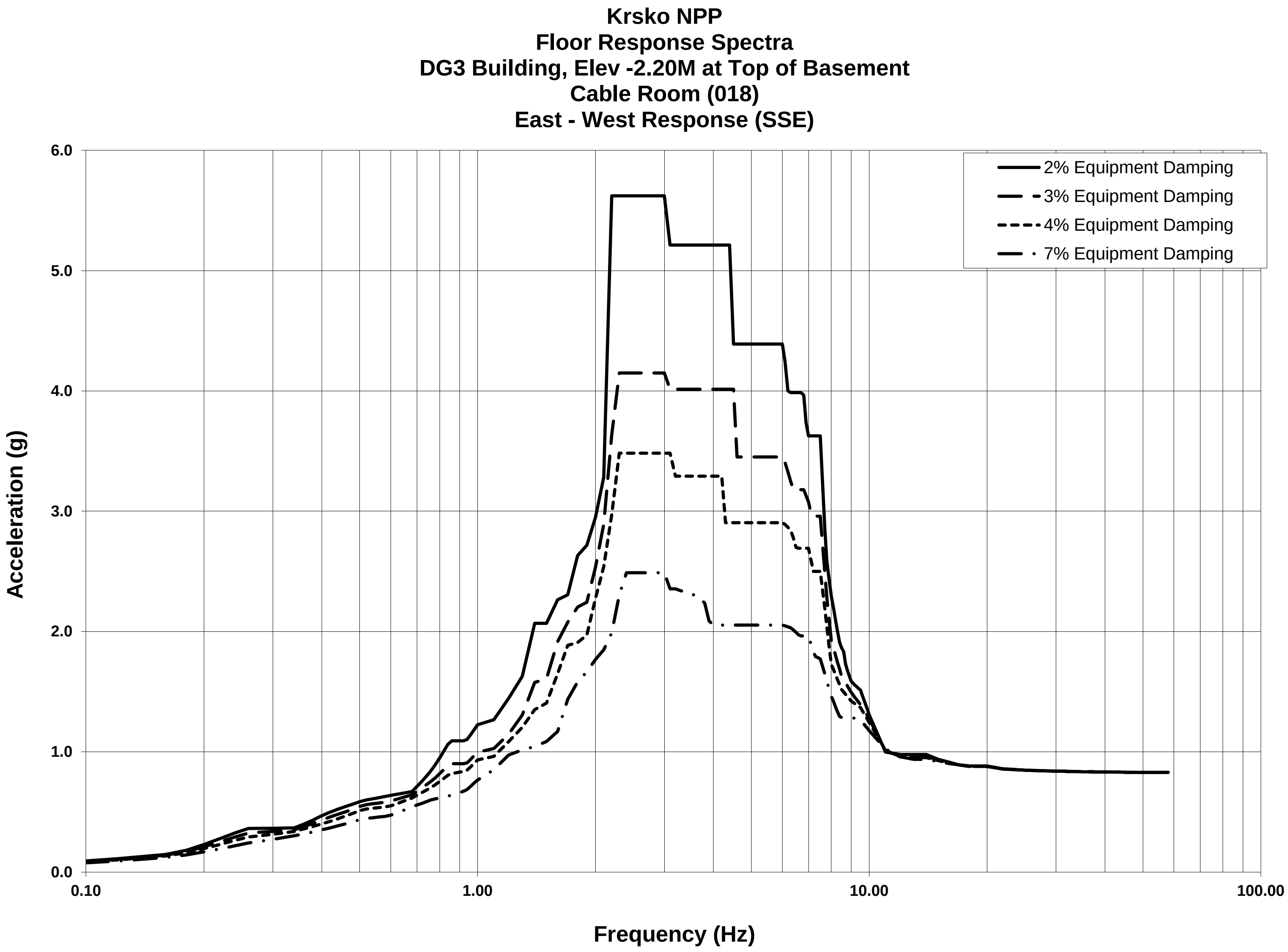

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Battery and Battery Charger Room
Vertical Response (OBE)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

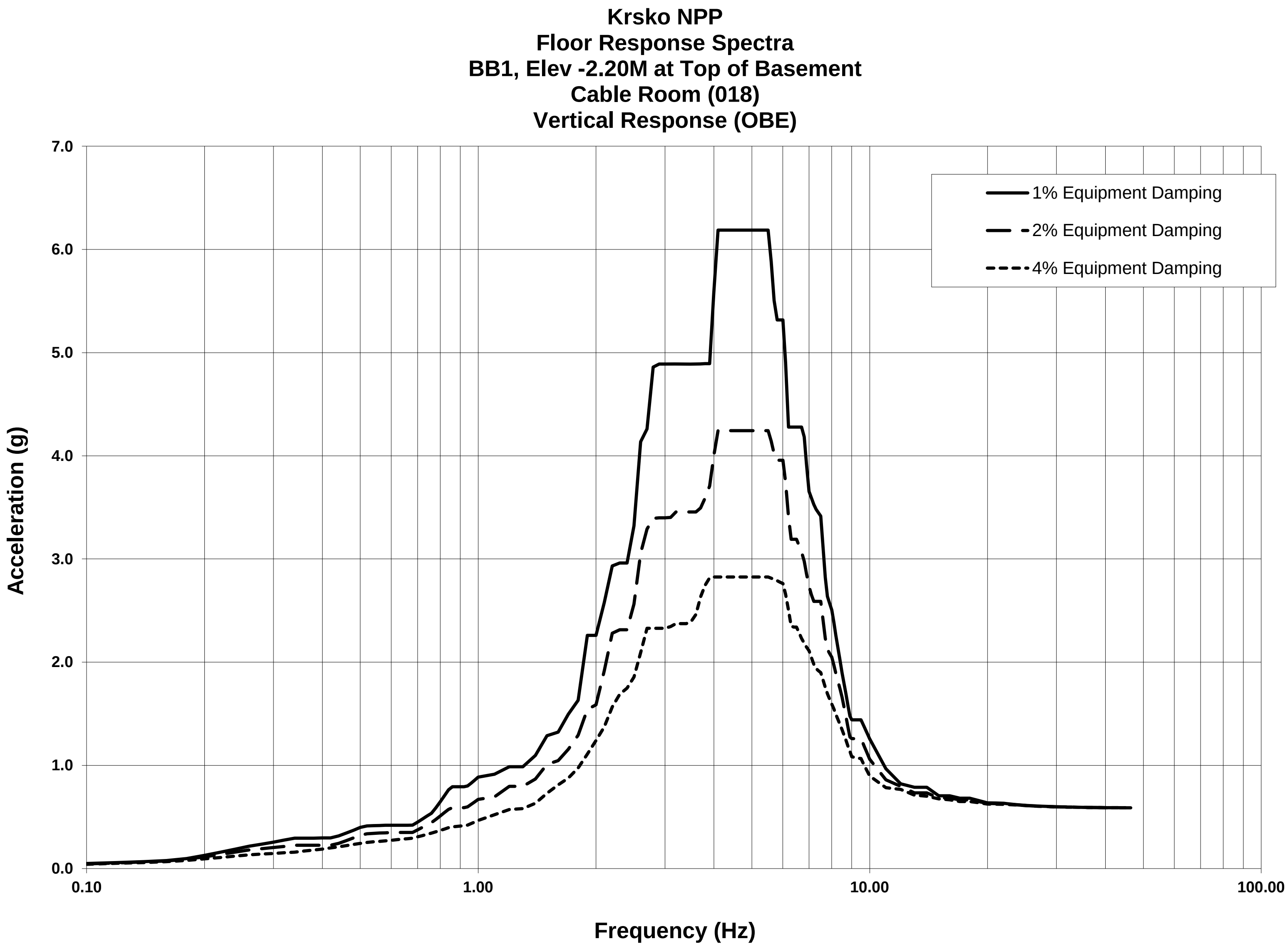

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor Area
Battery and Battery Charger Room
Vertical Response (SSE)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev -2.20M at Top of Basement
Cable Room (018)
North - South Response (OBE)
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.10
1.00
10.00
100.00
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

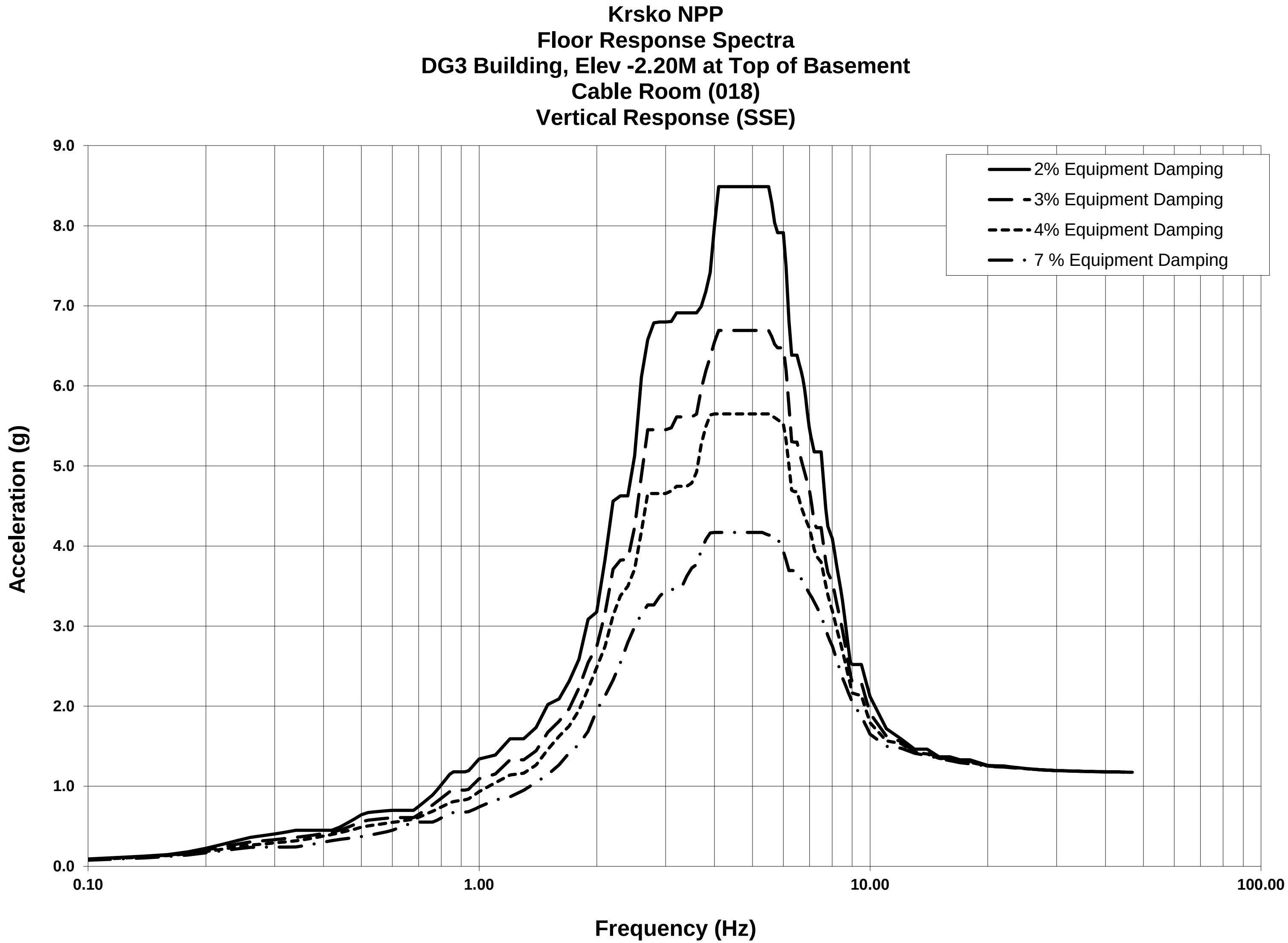

Krsko NPP
Floor Response Spectra
DG3 Building, Elev -2.20M at Top of Basement
Cable Room (018)
North - South Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev -2.20M at Top of Basement
Cable Room (018)
East - West Response (OBE)
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
DG3 Building, Elev -2.20M at Top of Basement
Cable Room (018)
East - West Response (SSE)
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev -2.20M at Top of Basement
Cable Room (018)
Vertical Response (OBE)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

x


Krsko NPP
Floor Response Spectra
DG3 Building, Elev -2.20M at Top of Basement
Cable Room (018)
Vertical Response (SSE)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping

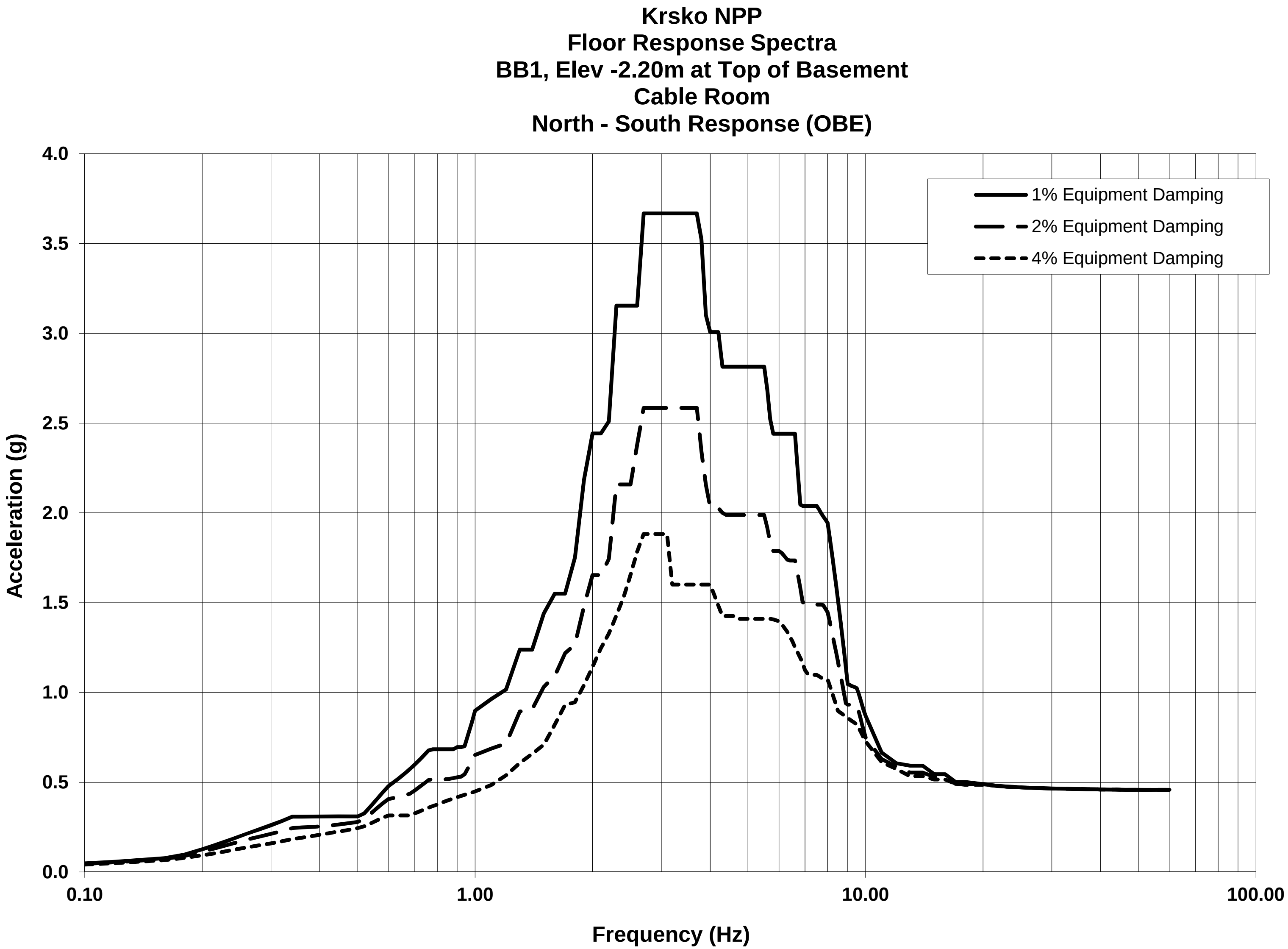
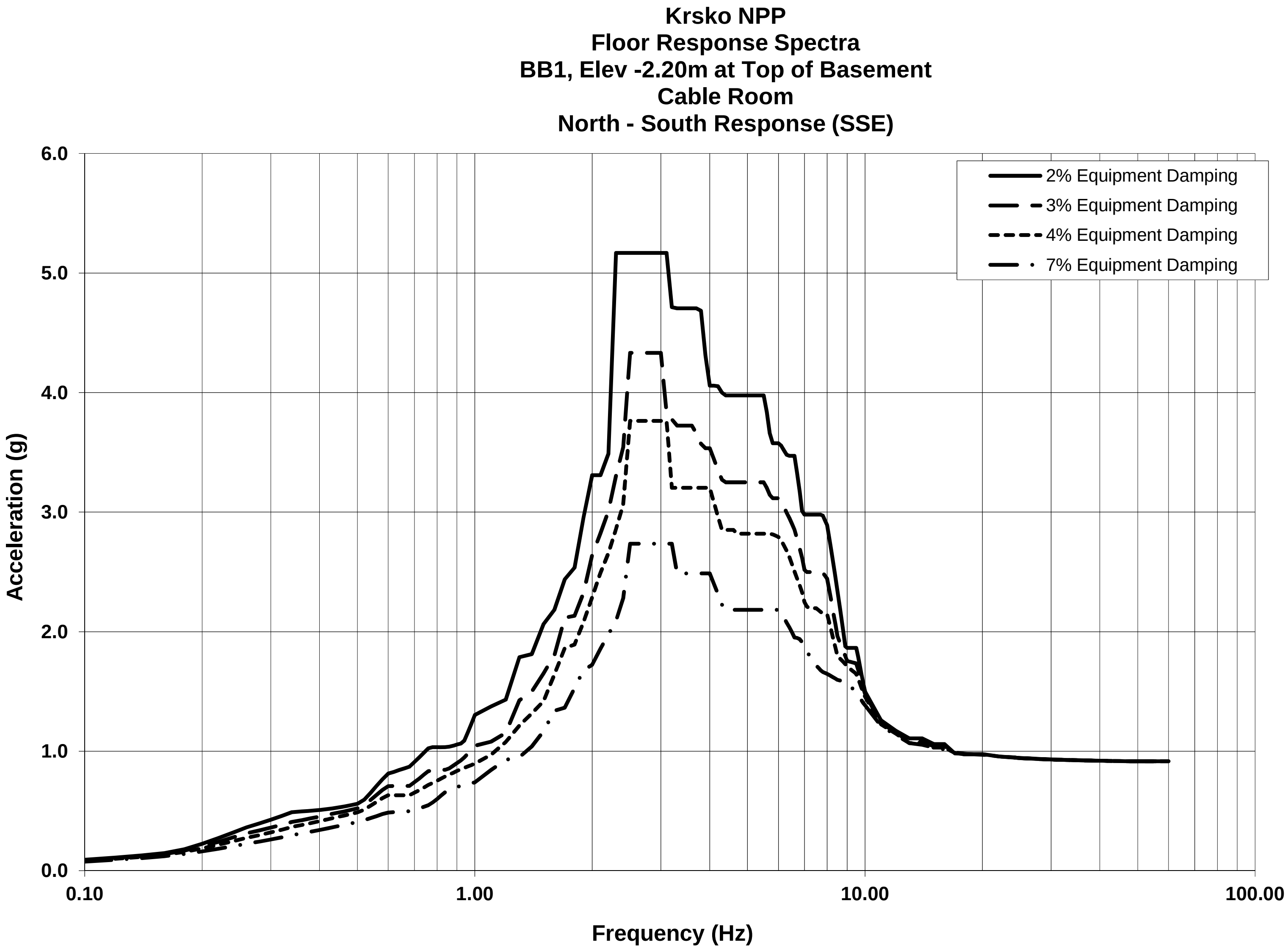

Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
North - South Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.10
1.00
10.00
100.00

Figure A159


Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
North - South Response (SSE)
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

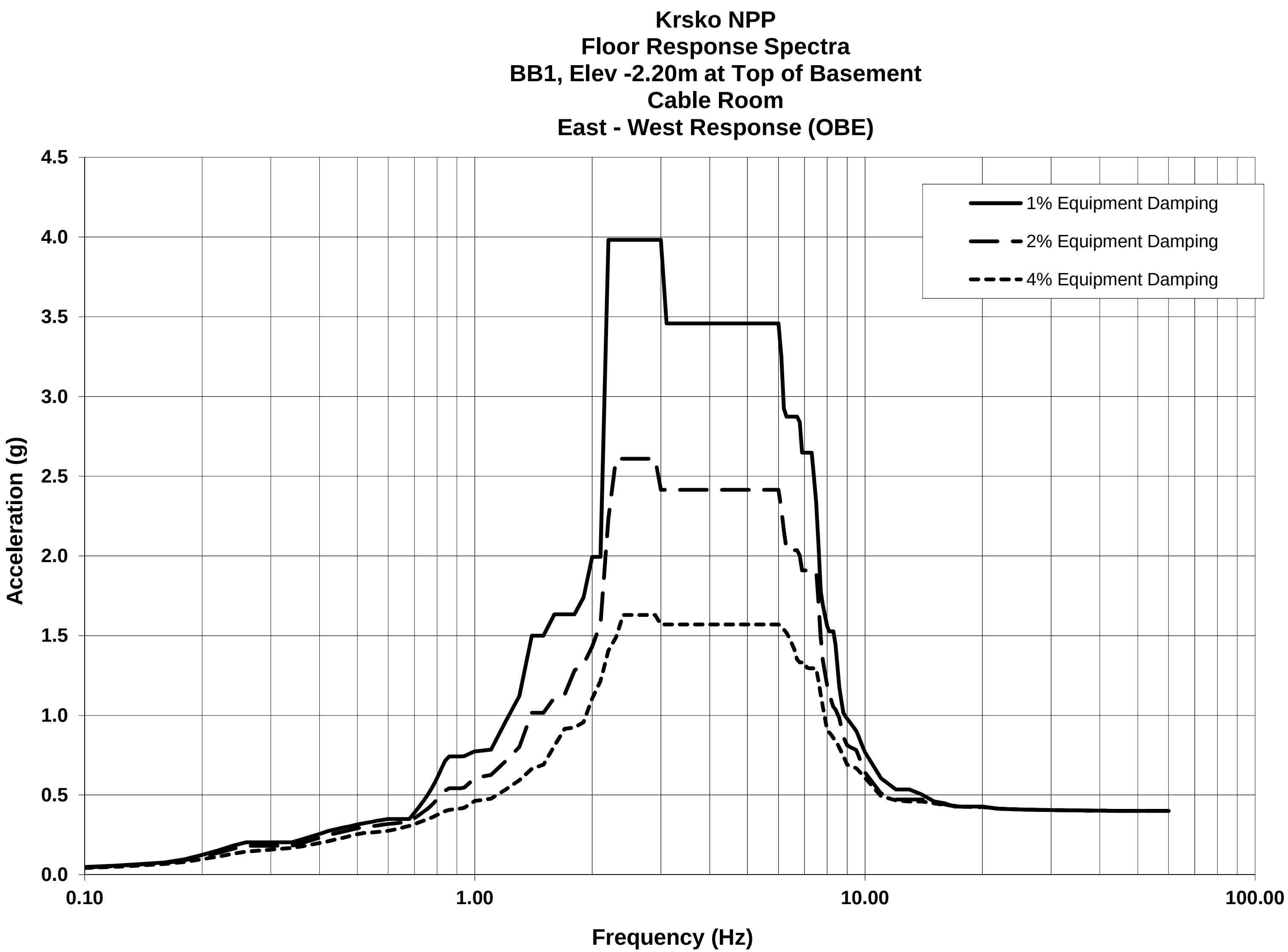
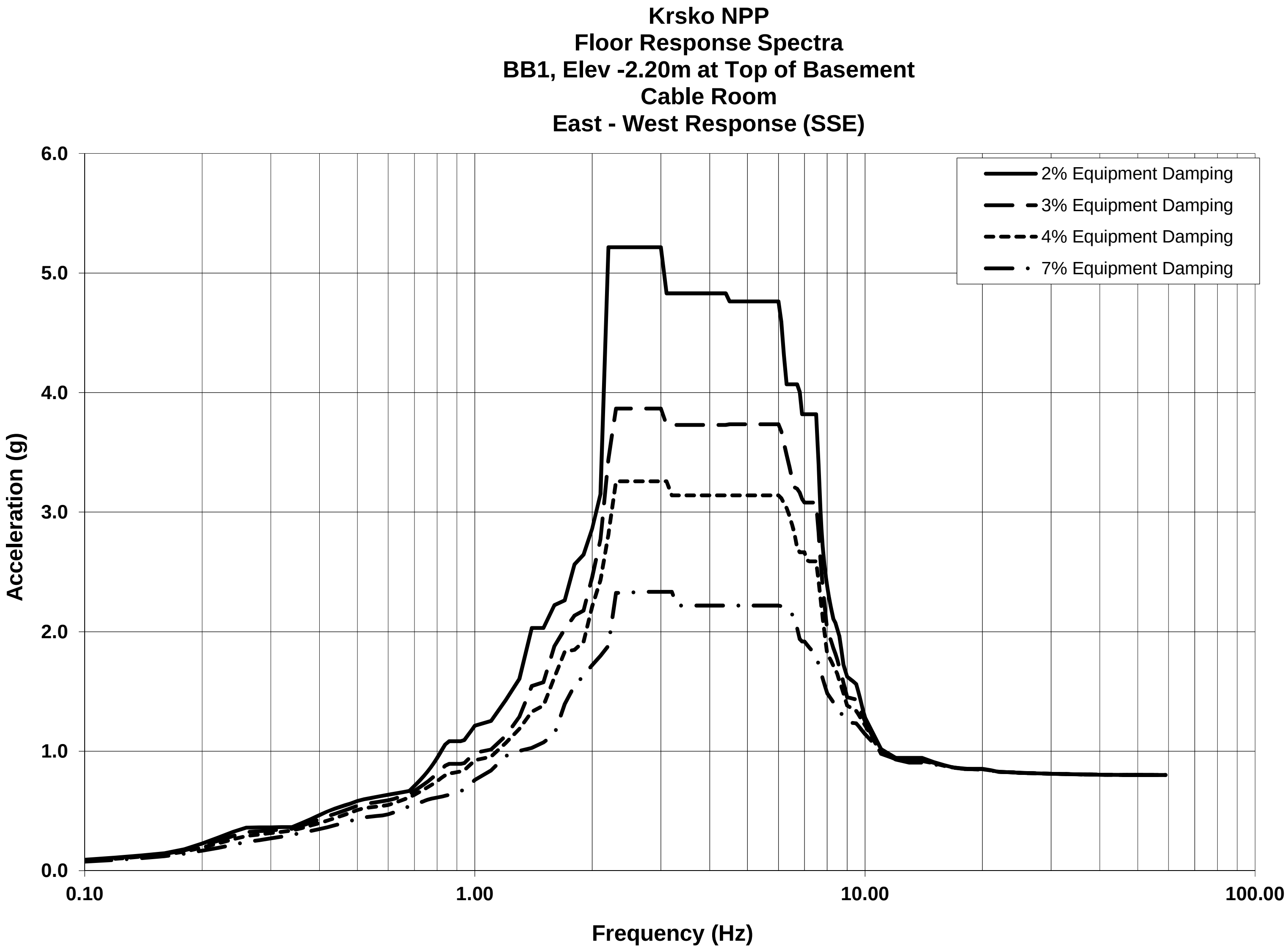
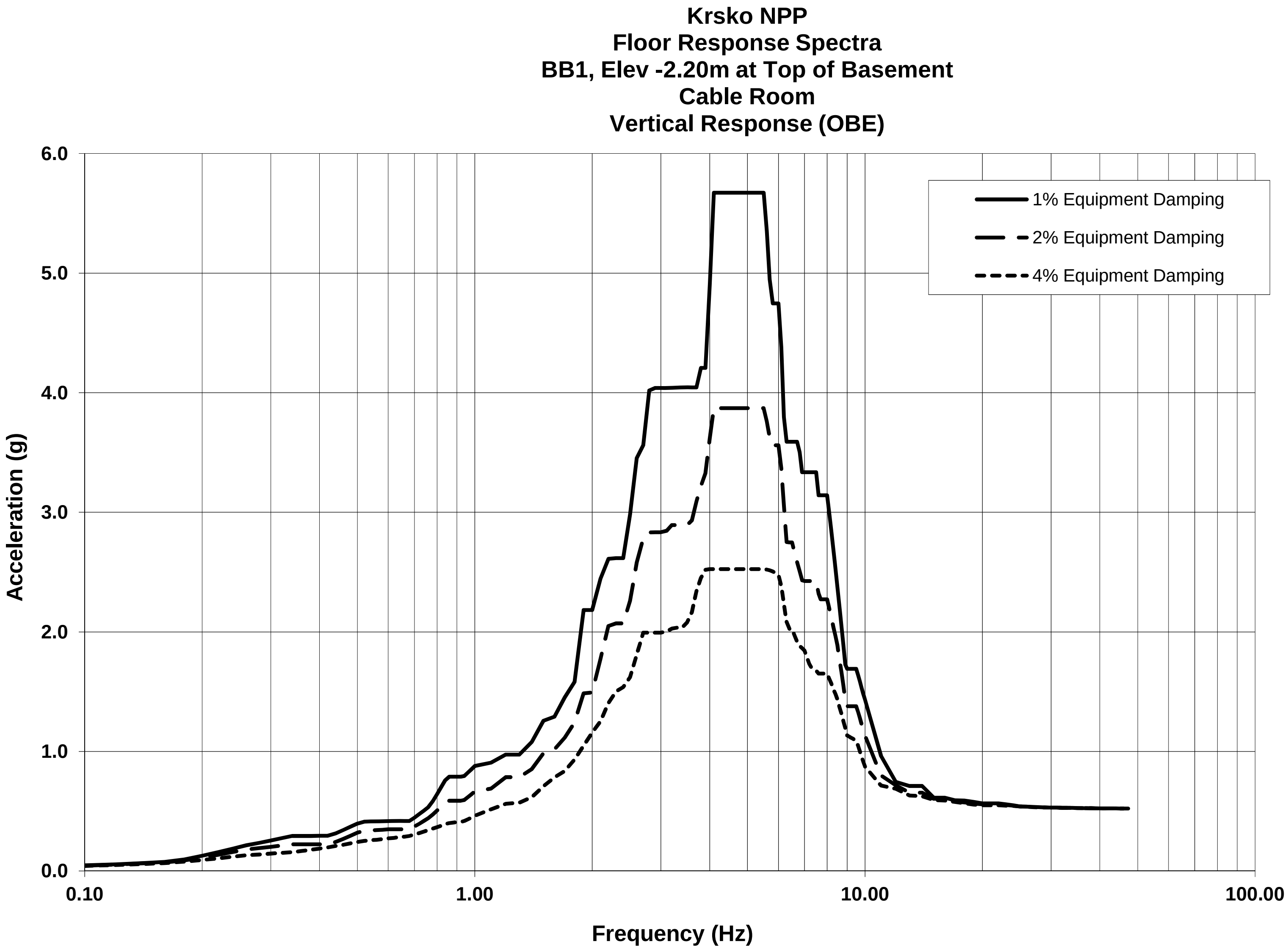
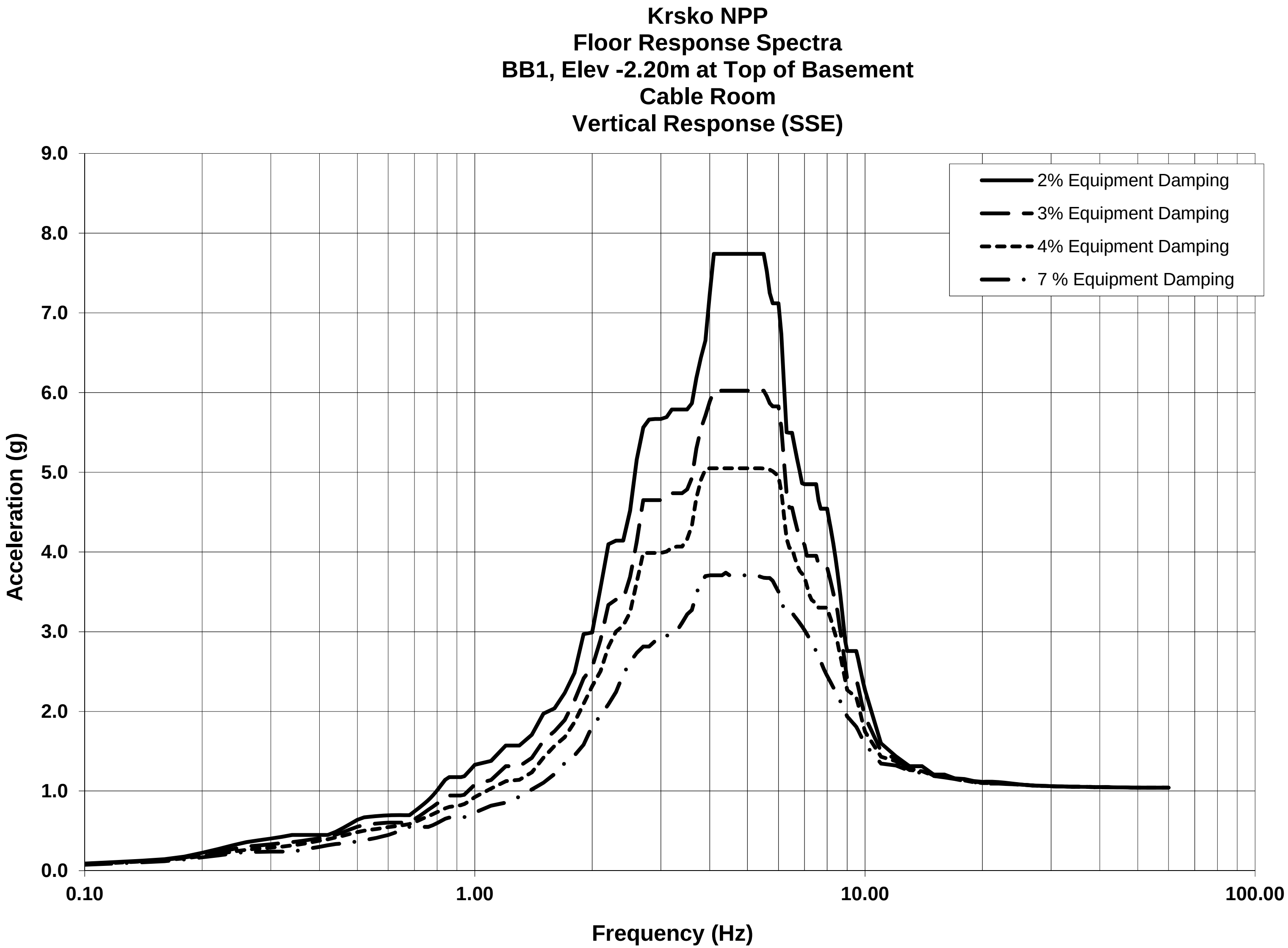
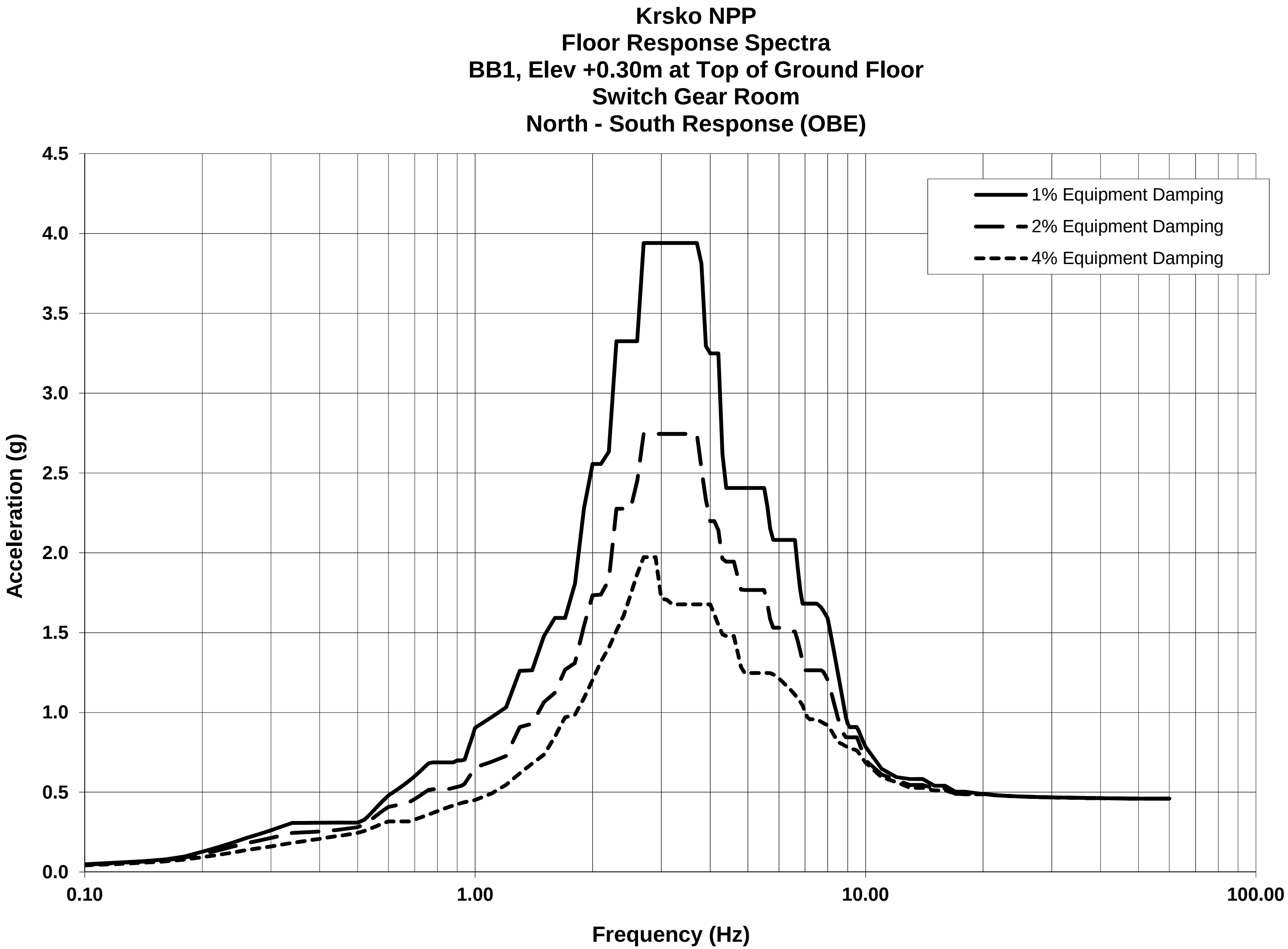

Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
East - West Response (OBE)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.10
1.00
10.00
100.00

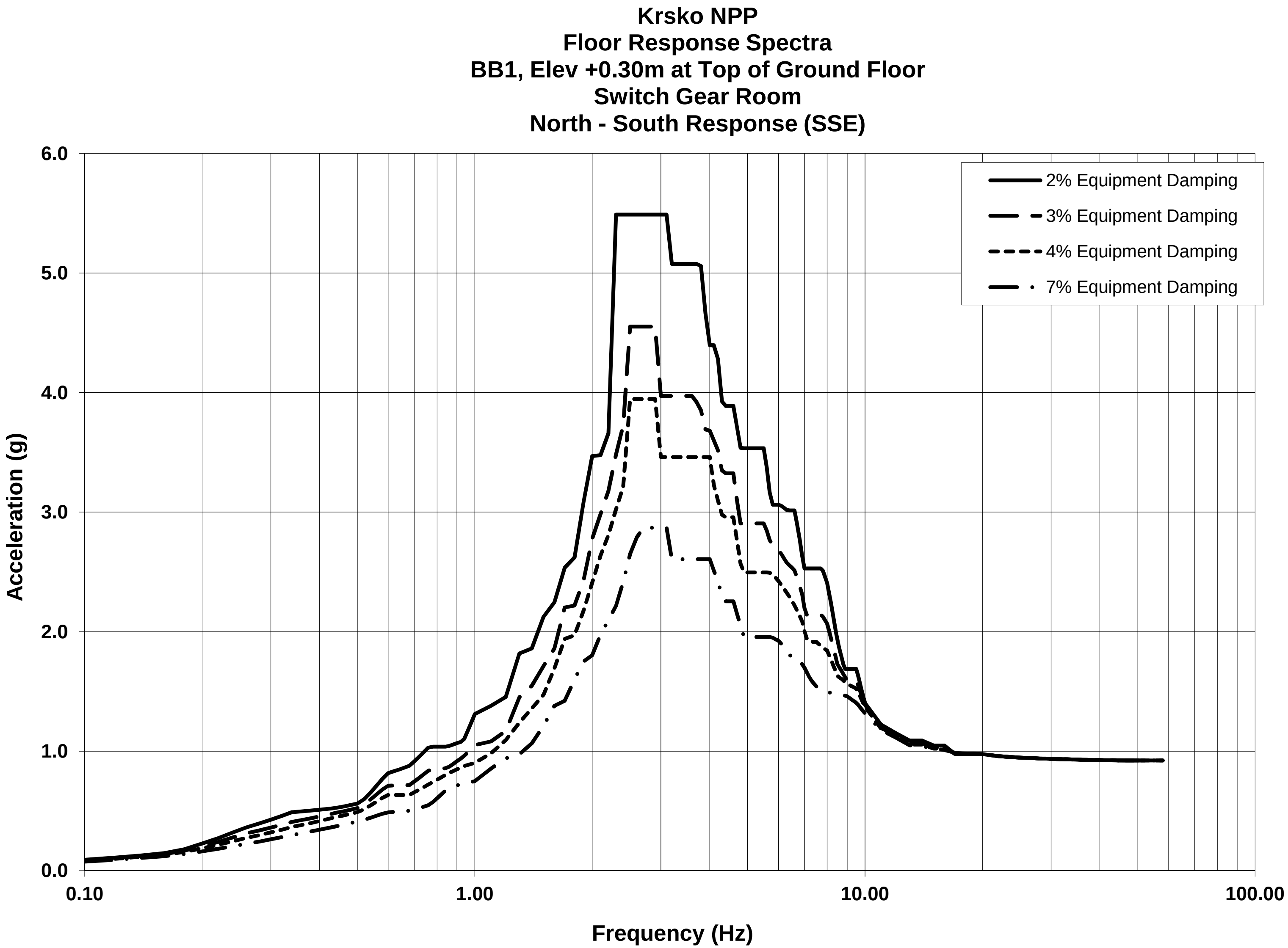
Figure A161

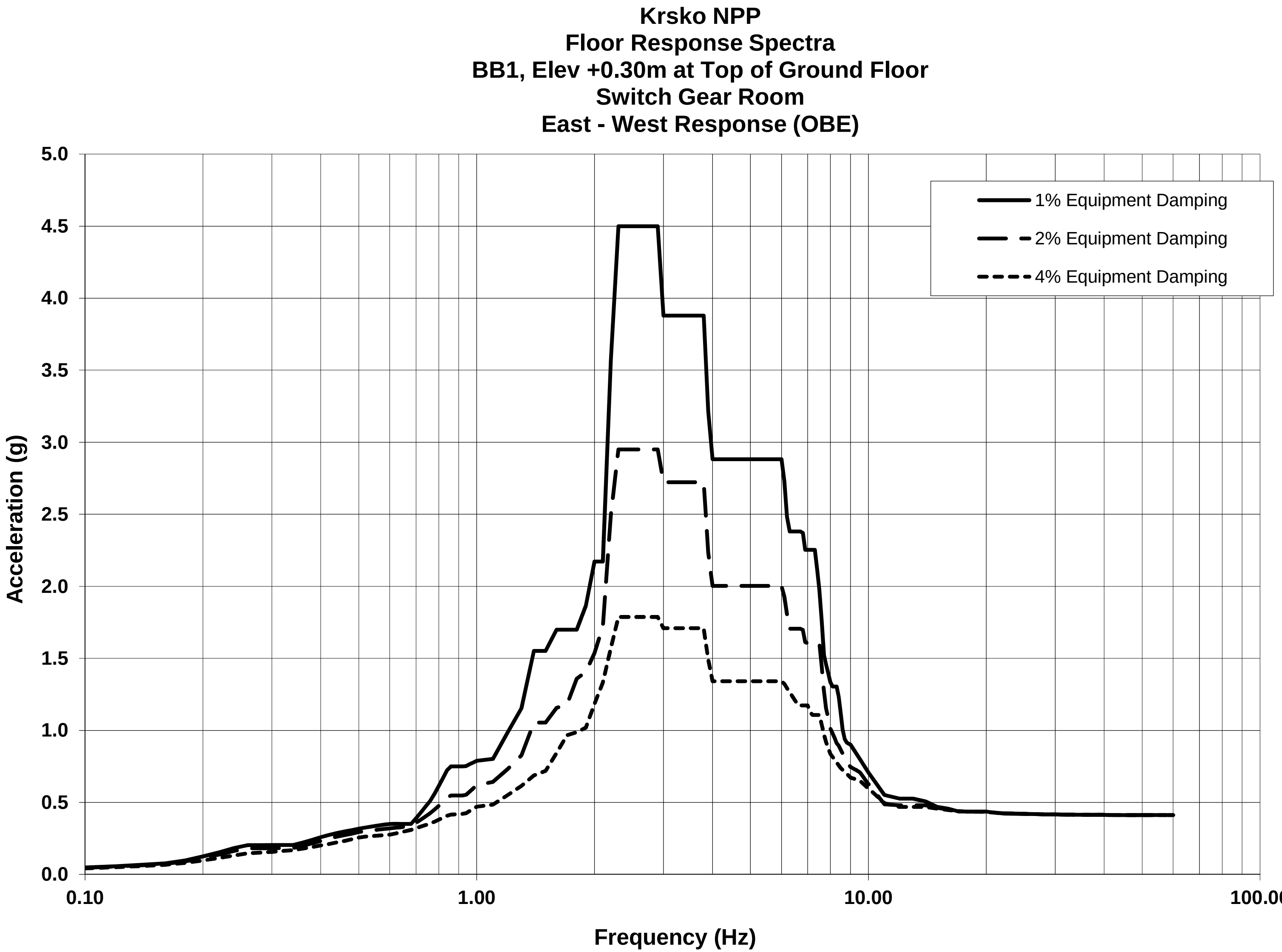

Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
East - West Response (SSE)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

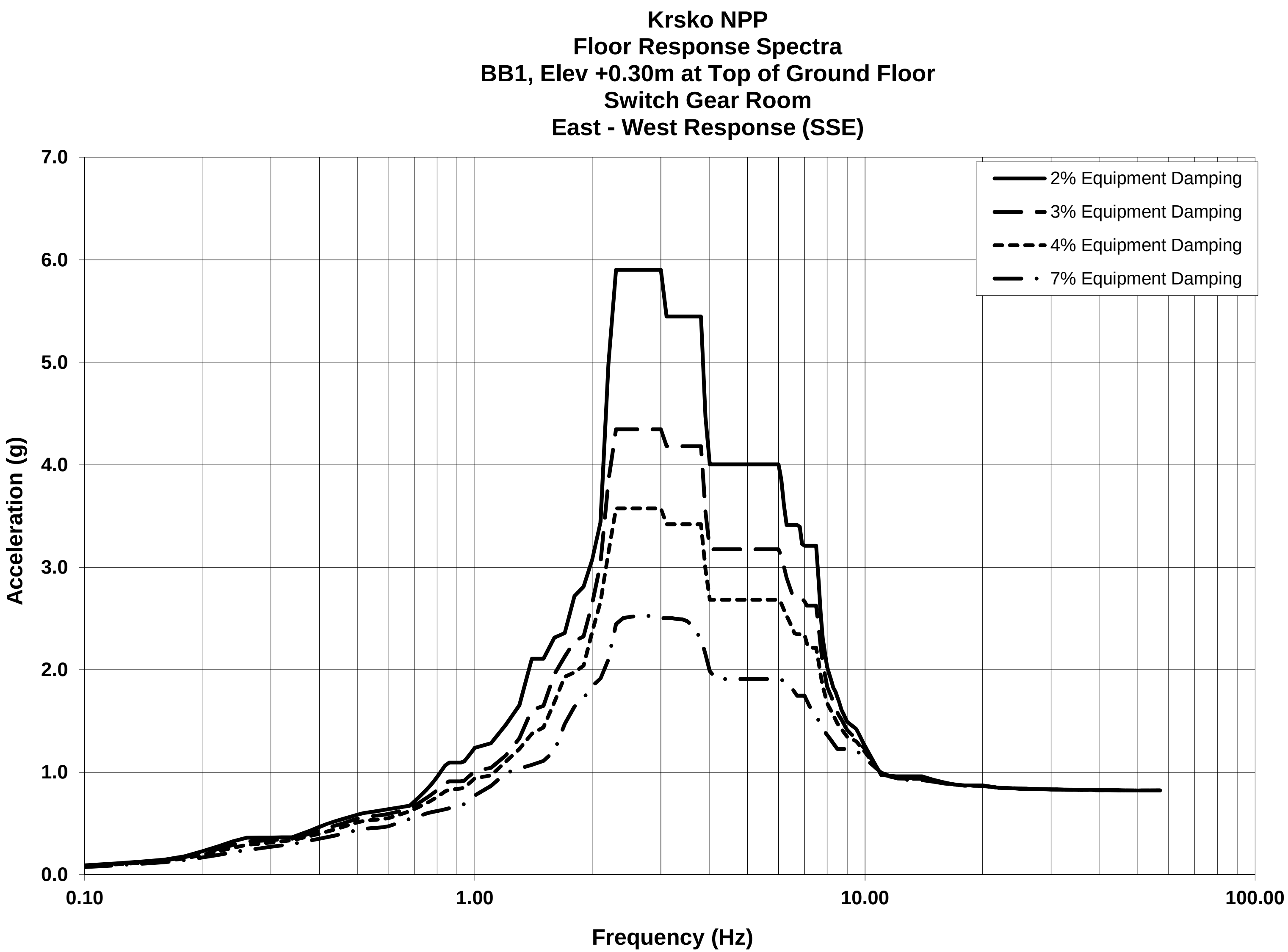

Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
Vertical Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.10
1.00
10.00
100.00

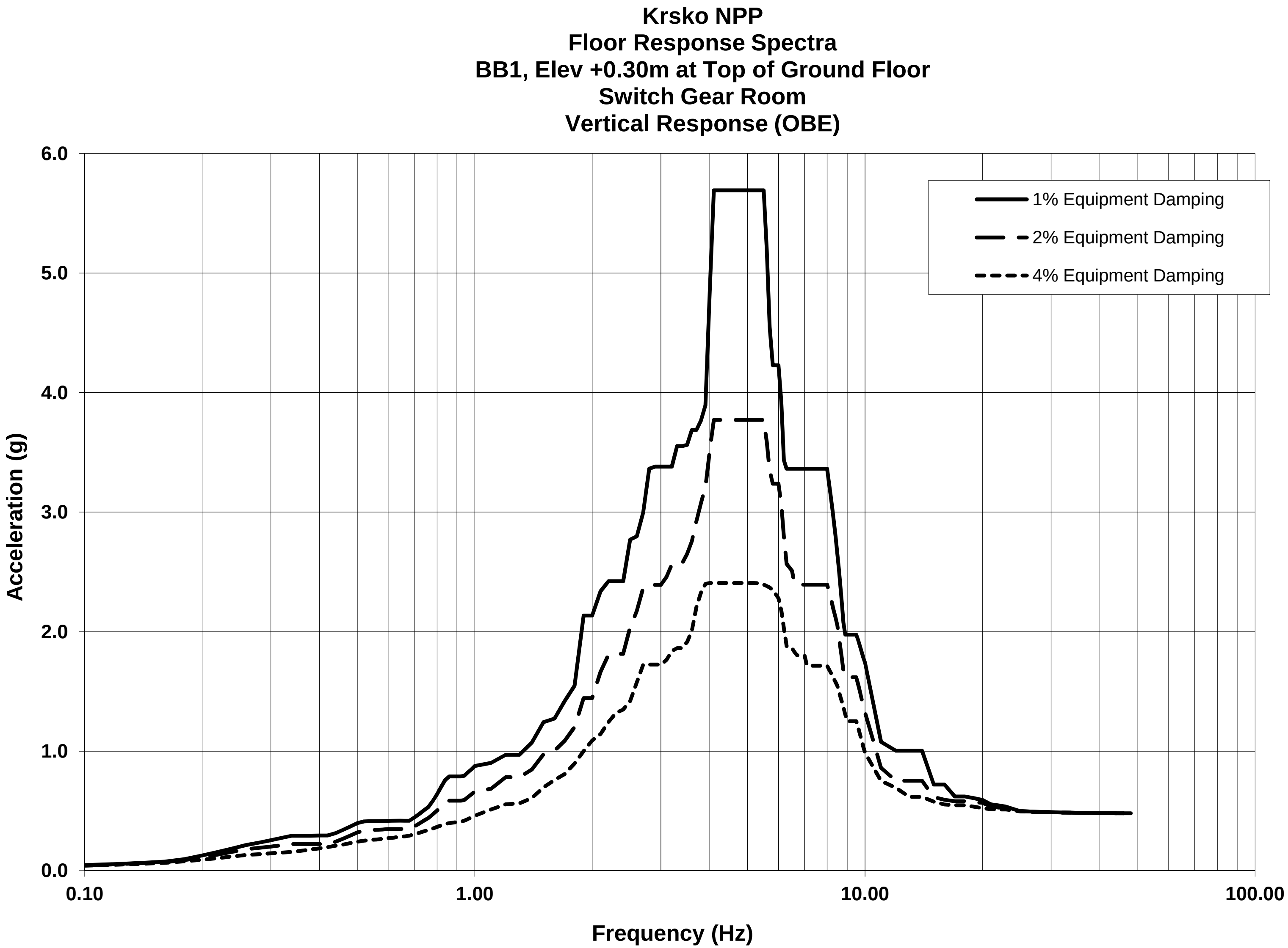

Krsko NPP
Floor Response Spectra
BB1, Elev -2.20m at Top of Basement
Cable Room
Vertical Response (SSE)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.10
1.00
10.00
100.00
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping

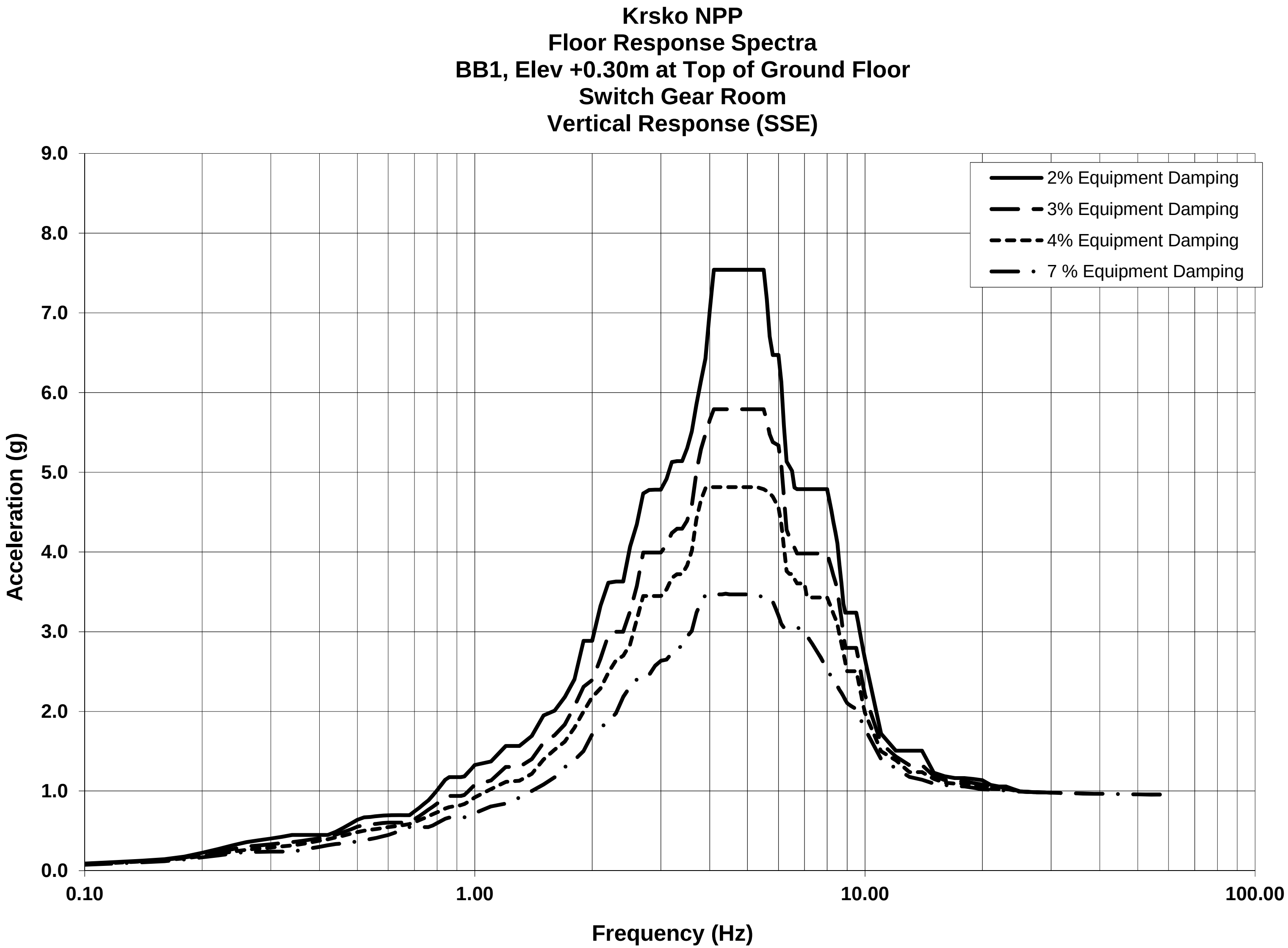

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
North - South Response (OBE)
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
North - South Response (SSE)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
East - West Response (OBE)
Acceleration (g)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
East - West Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
Vertical Response (OBE)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30m at Top of Ground Floor
Switch Gear Room
Vertical Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00

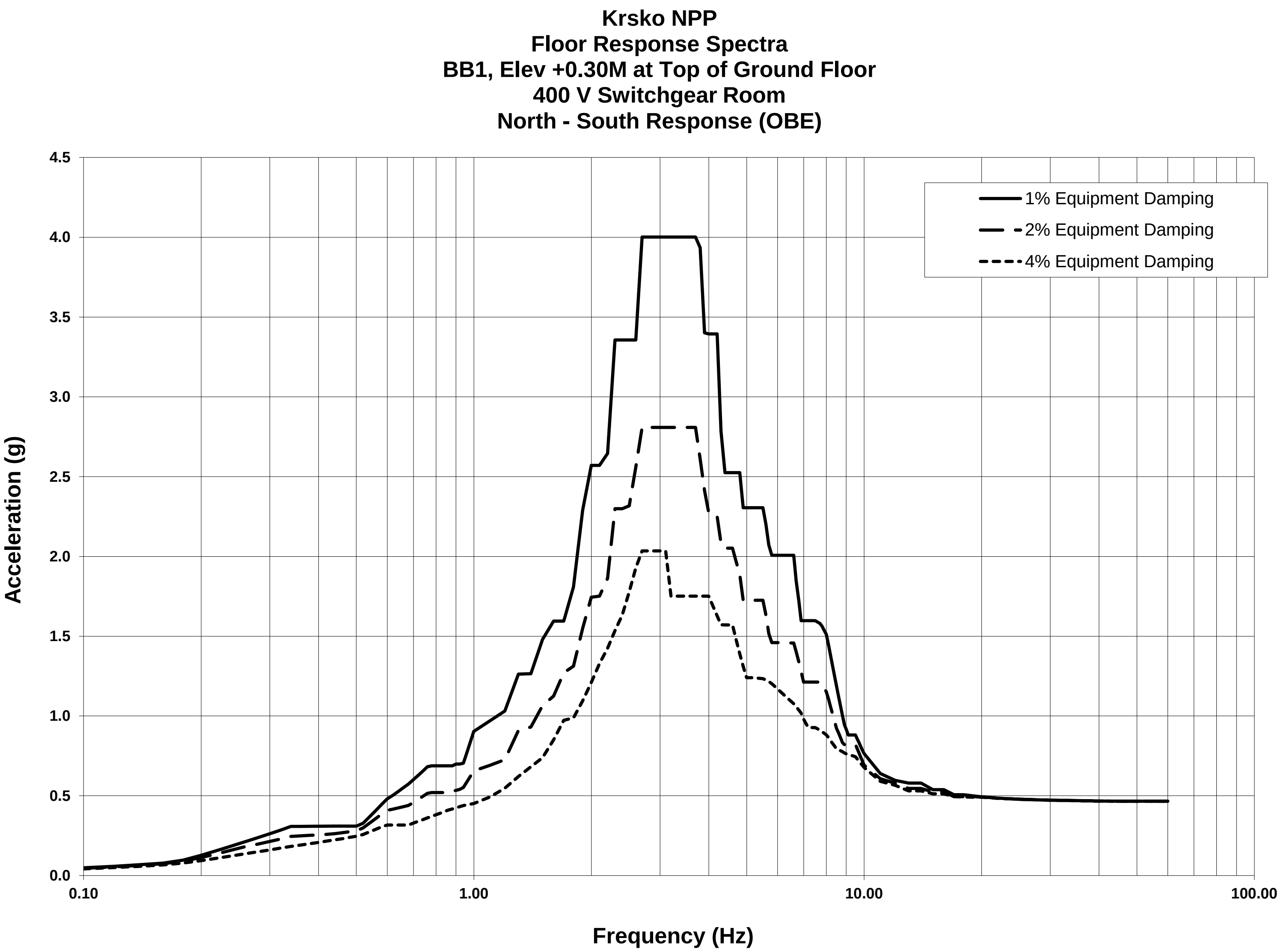
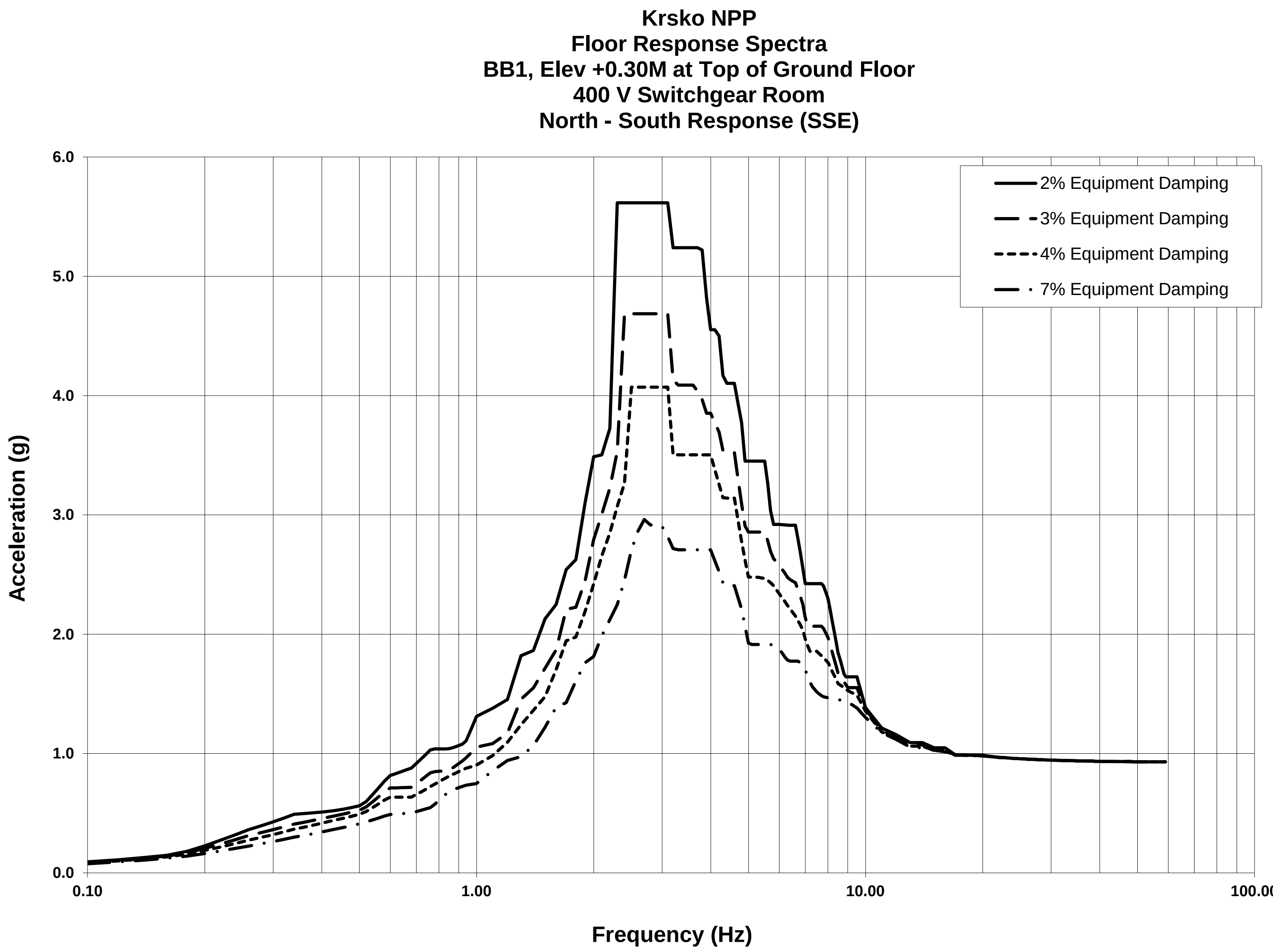

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
North - South Response (OBE)
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure A171


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
North - South Response (SSE)
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

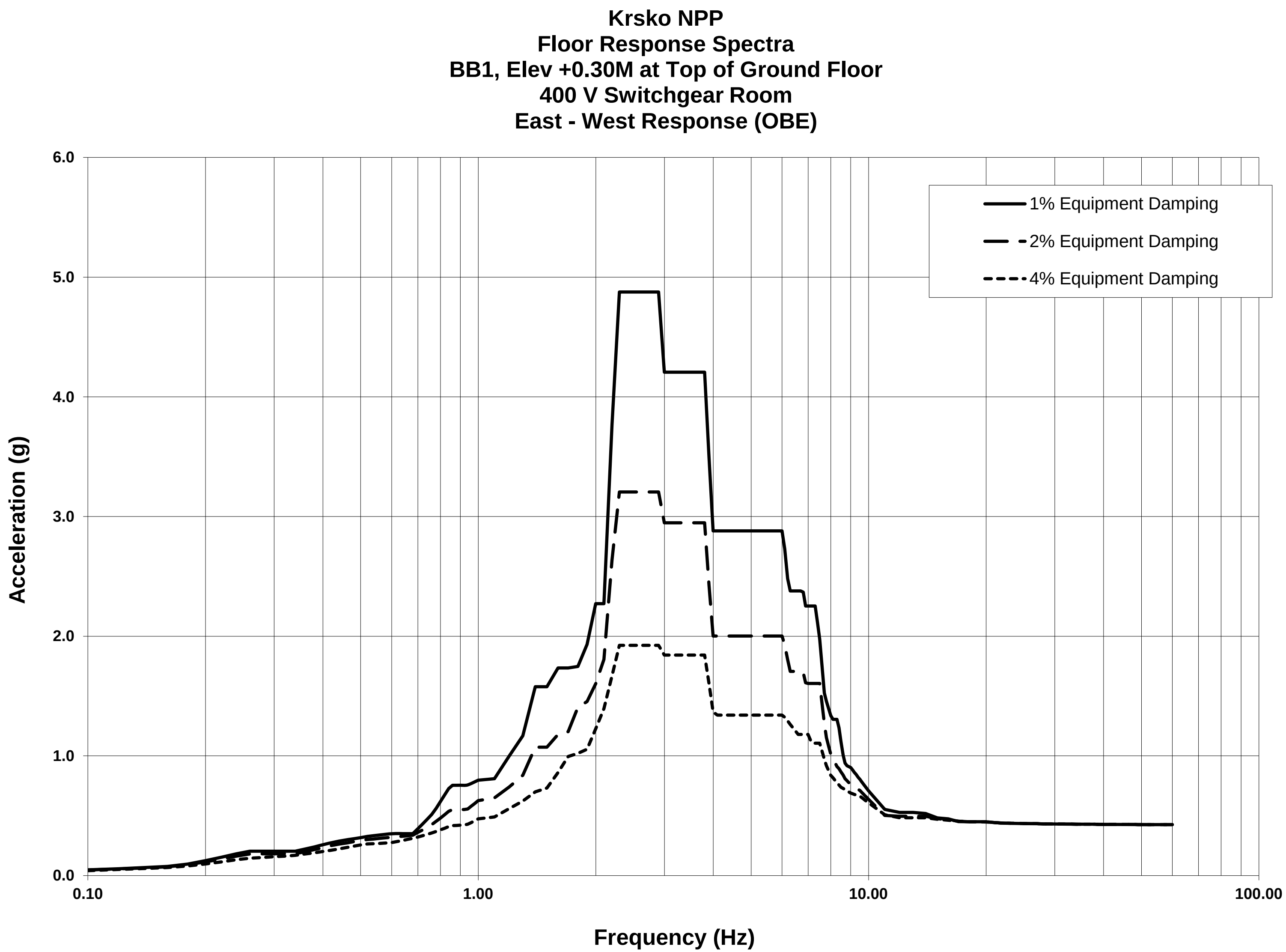

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
East - West Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.10
1.00
10.00
100.00
Frequency (Hz)

Figure A173

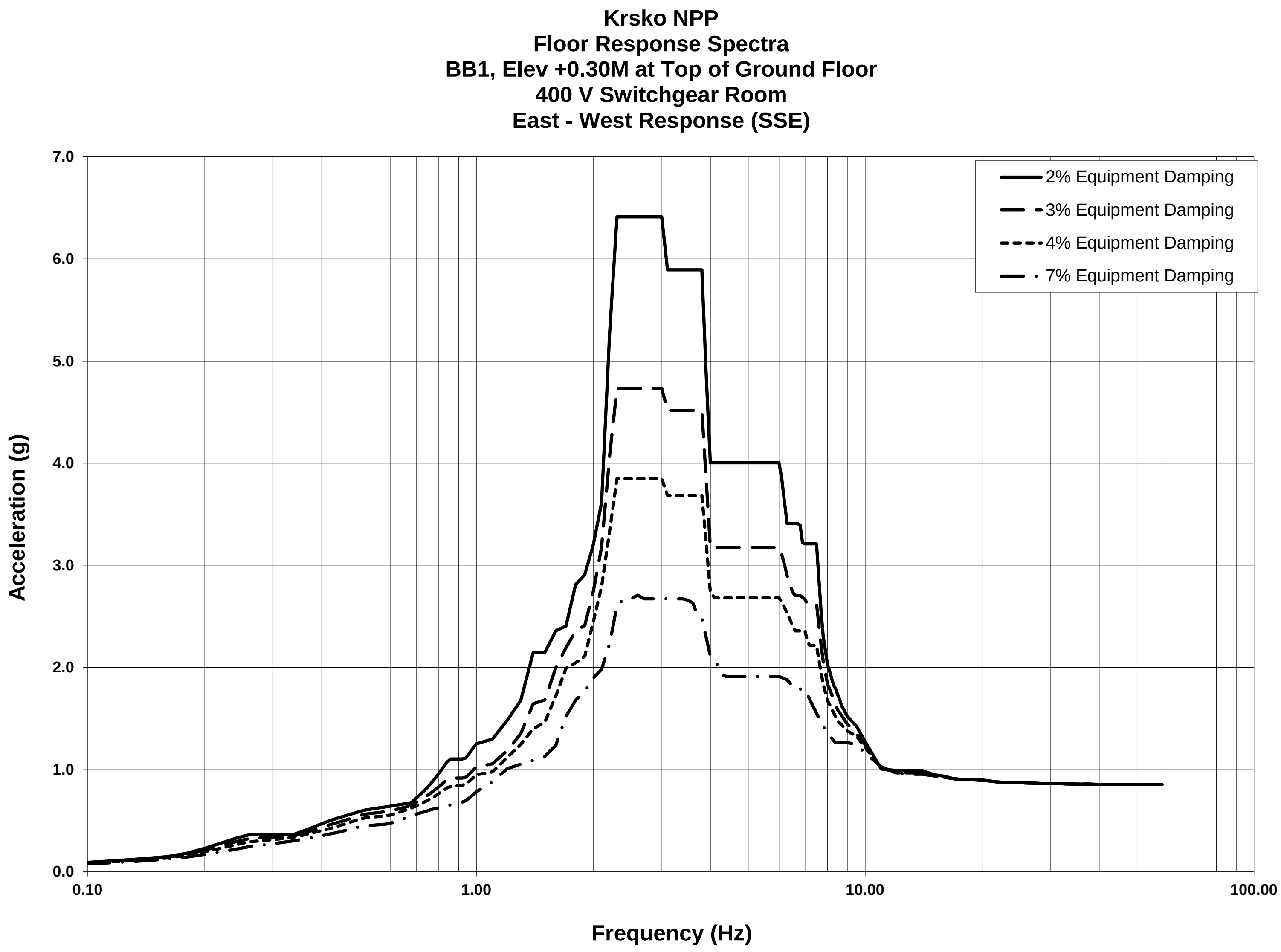
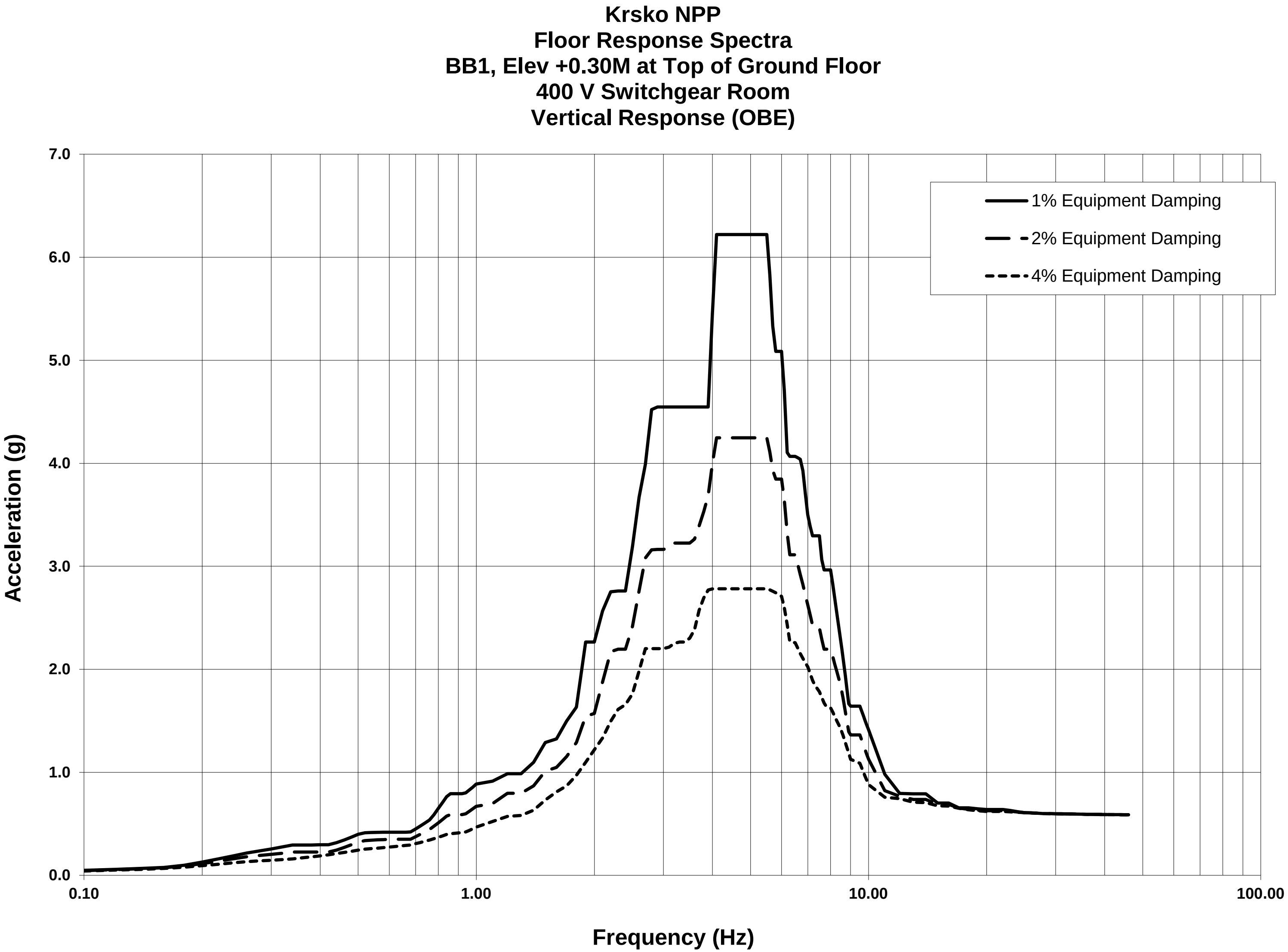
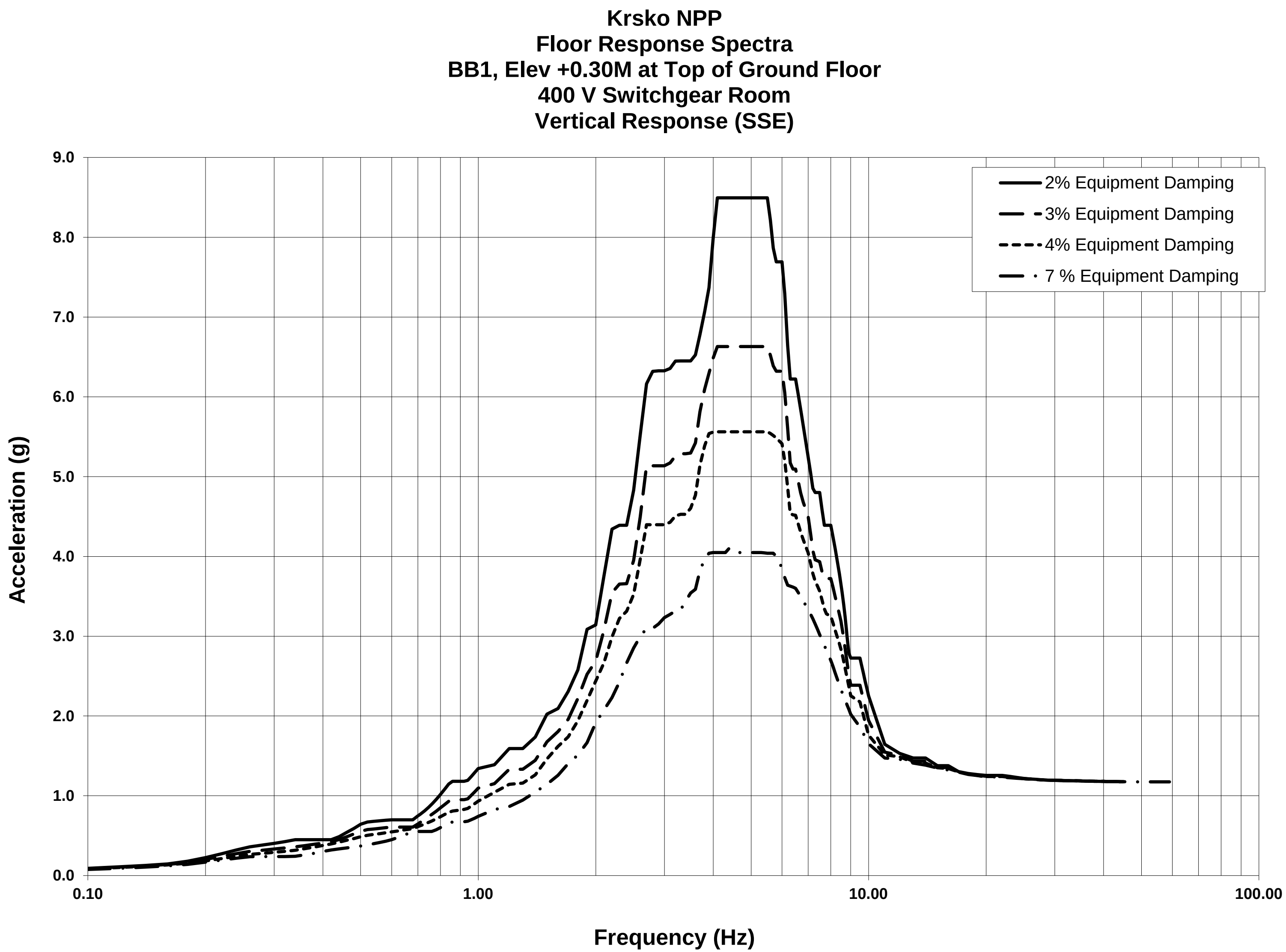

Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
East - West Response (SSE)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure A174


Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
Vertical Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00



Krsko NPP
Floor Response Spectra
BB1, Elev +0.30M at Top of Ground Floor
400 V Switchgear Room
Vertical Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00

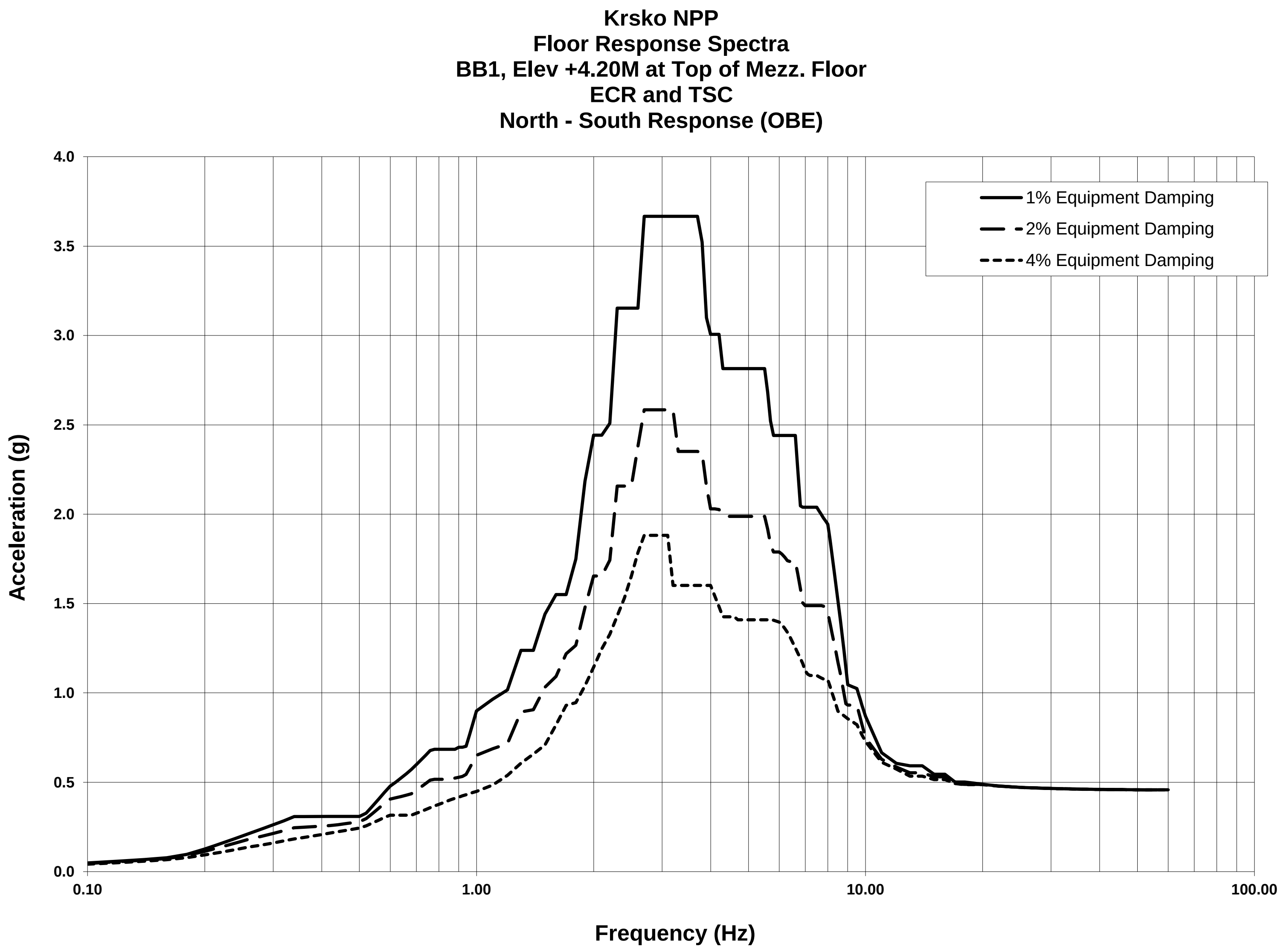
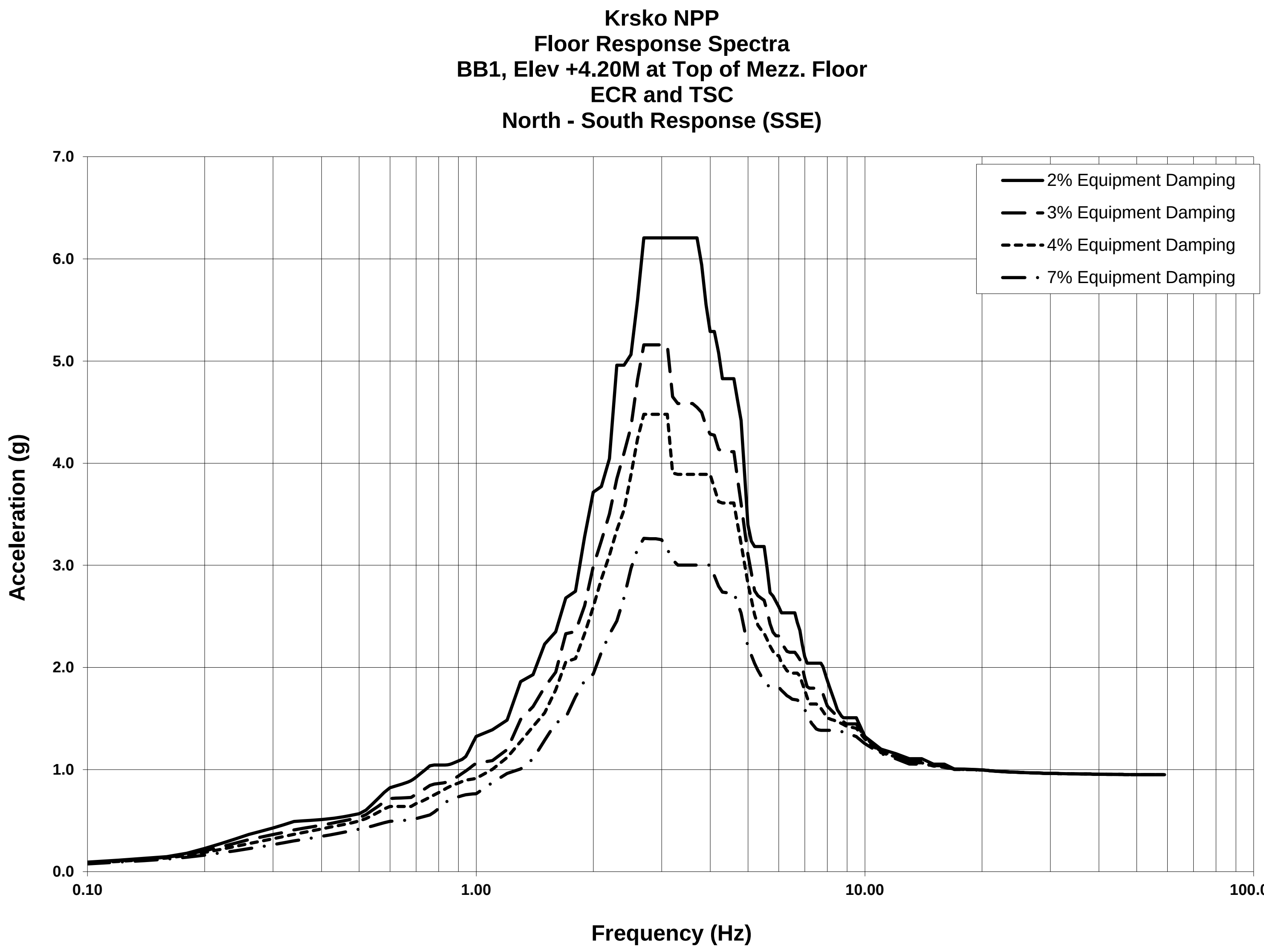
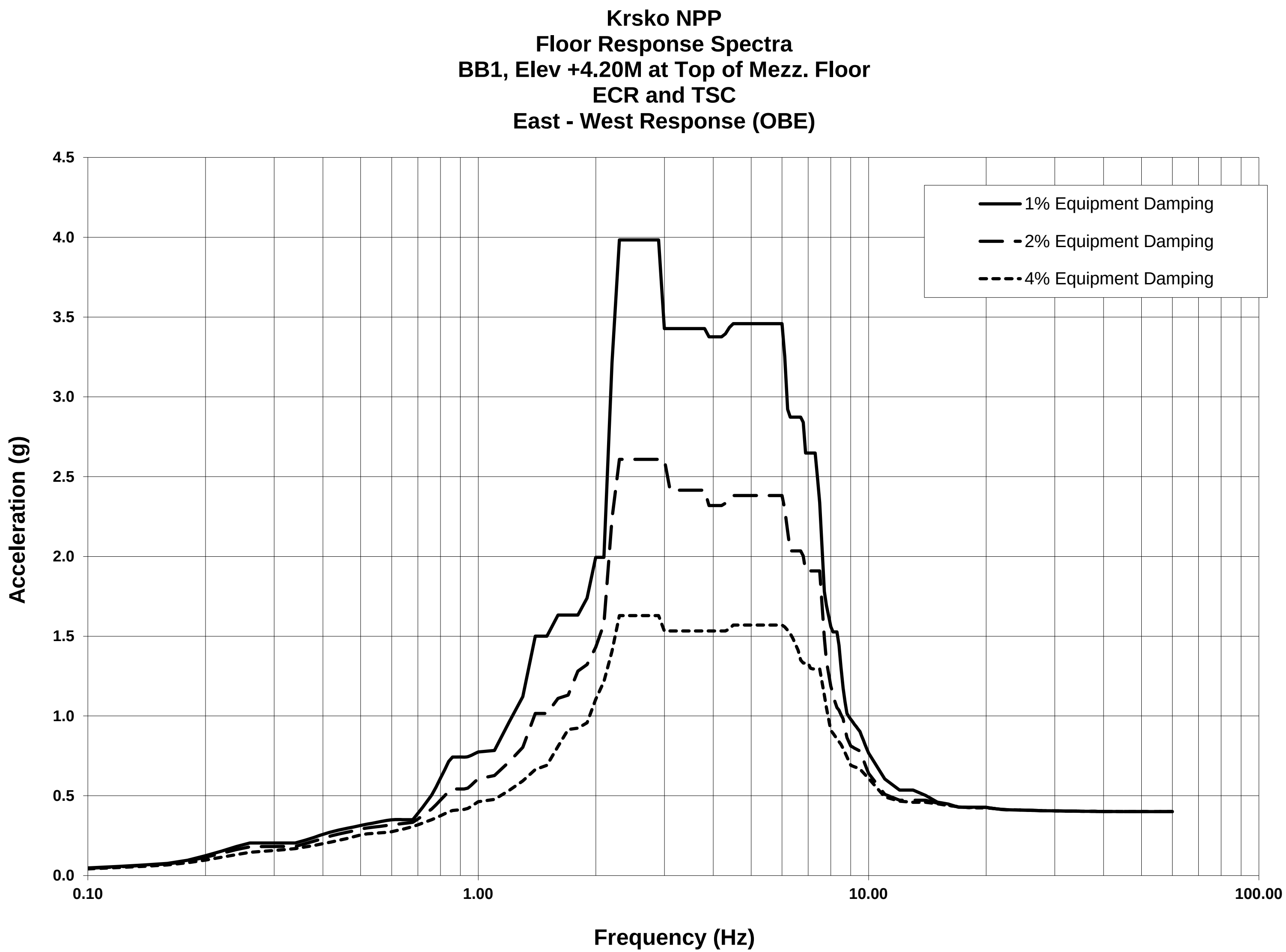
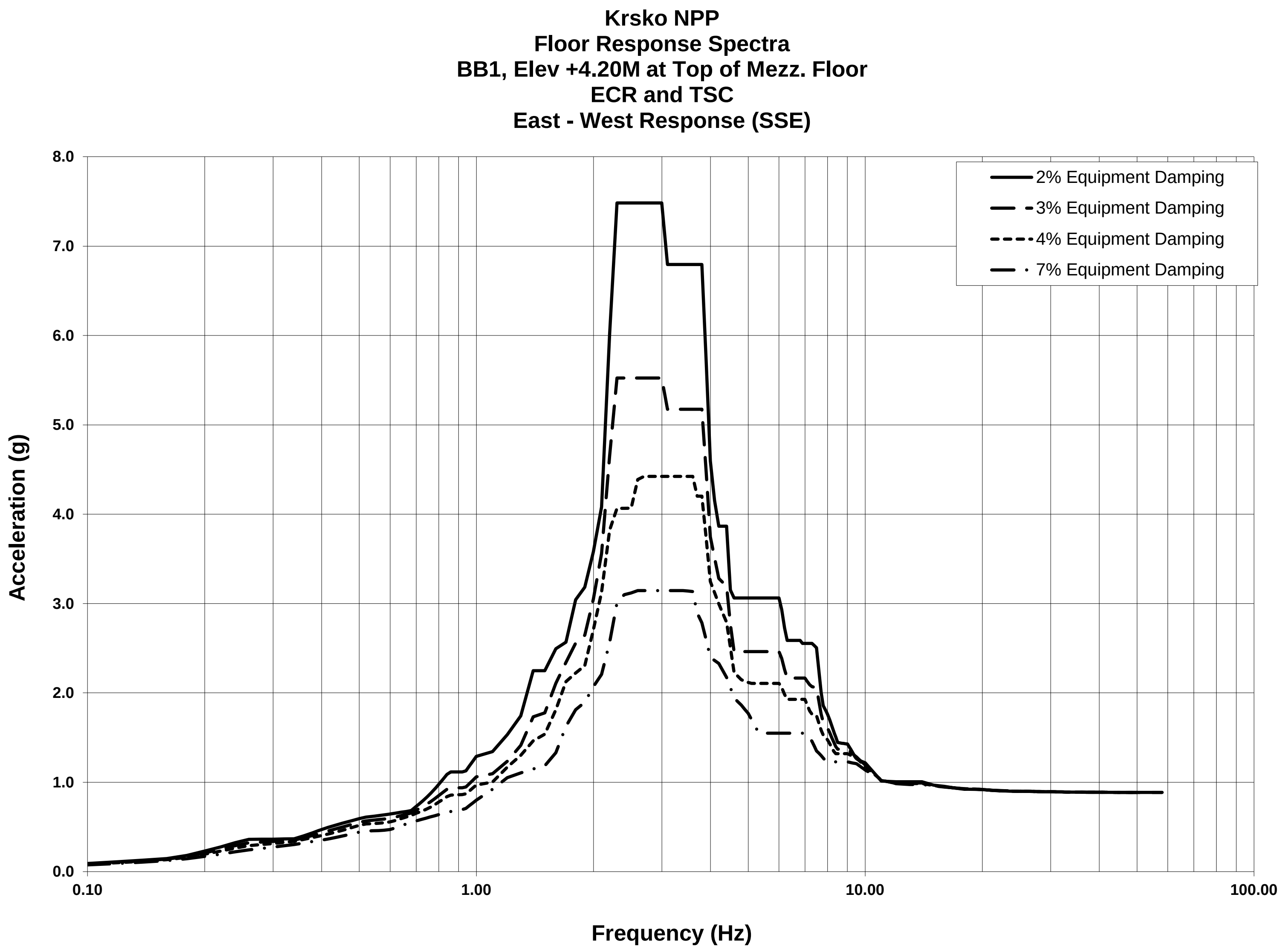

Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
North - South Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)

Figure A177


Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
North - South Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
East - West Response (OBE)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
East - West Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00

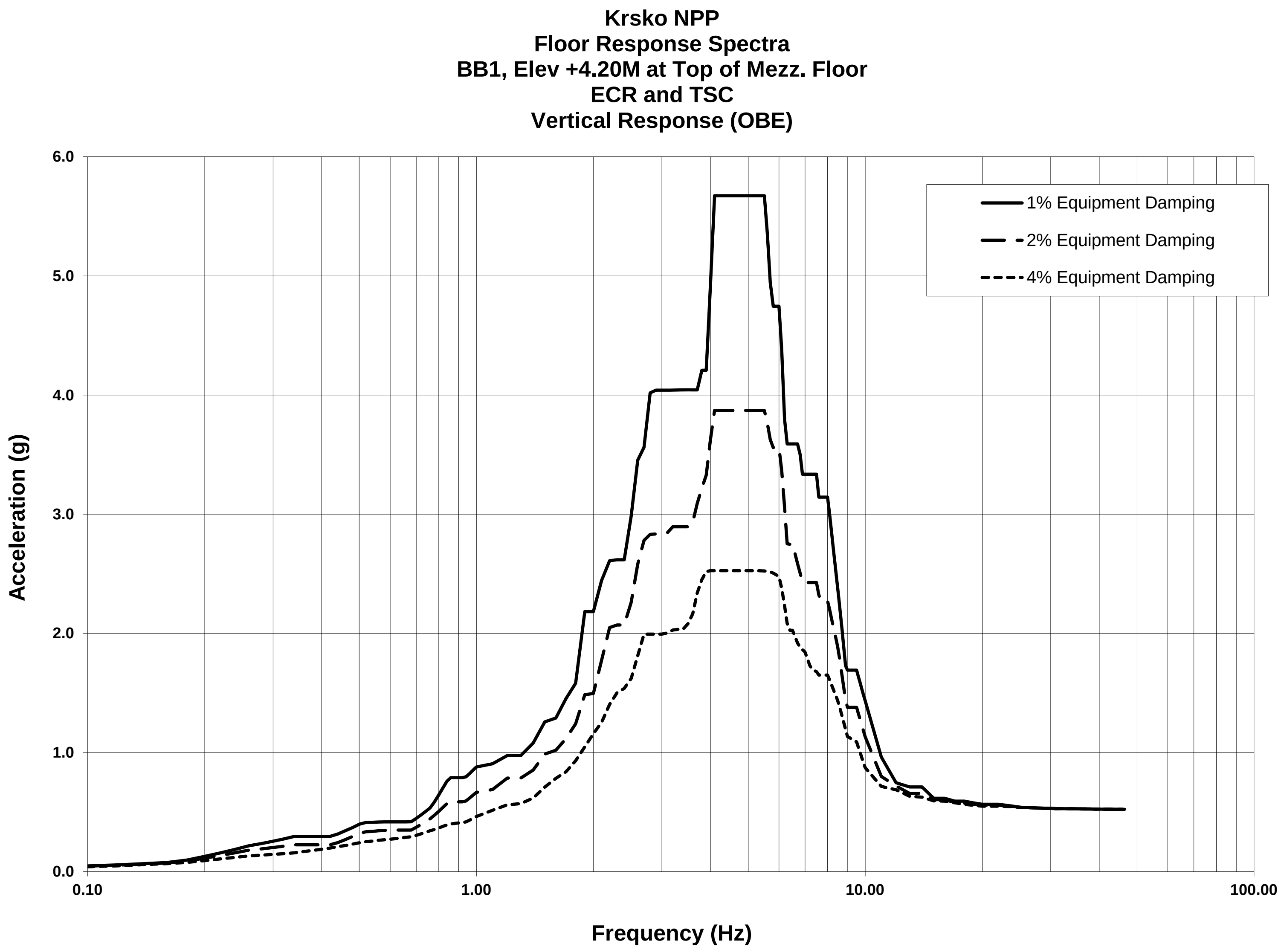
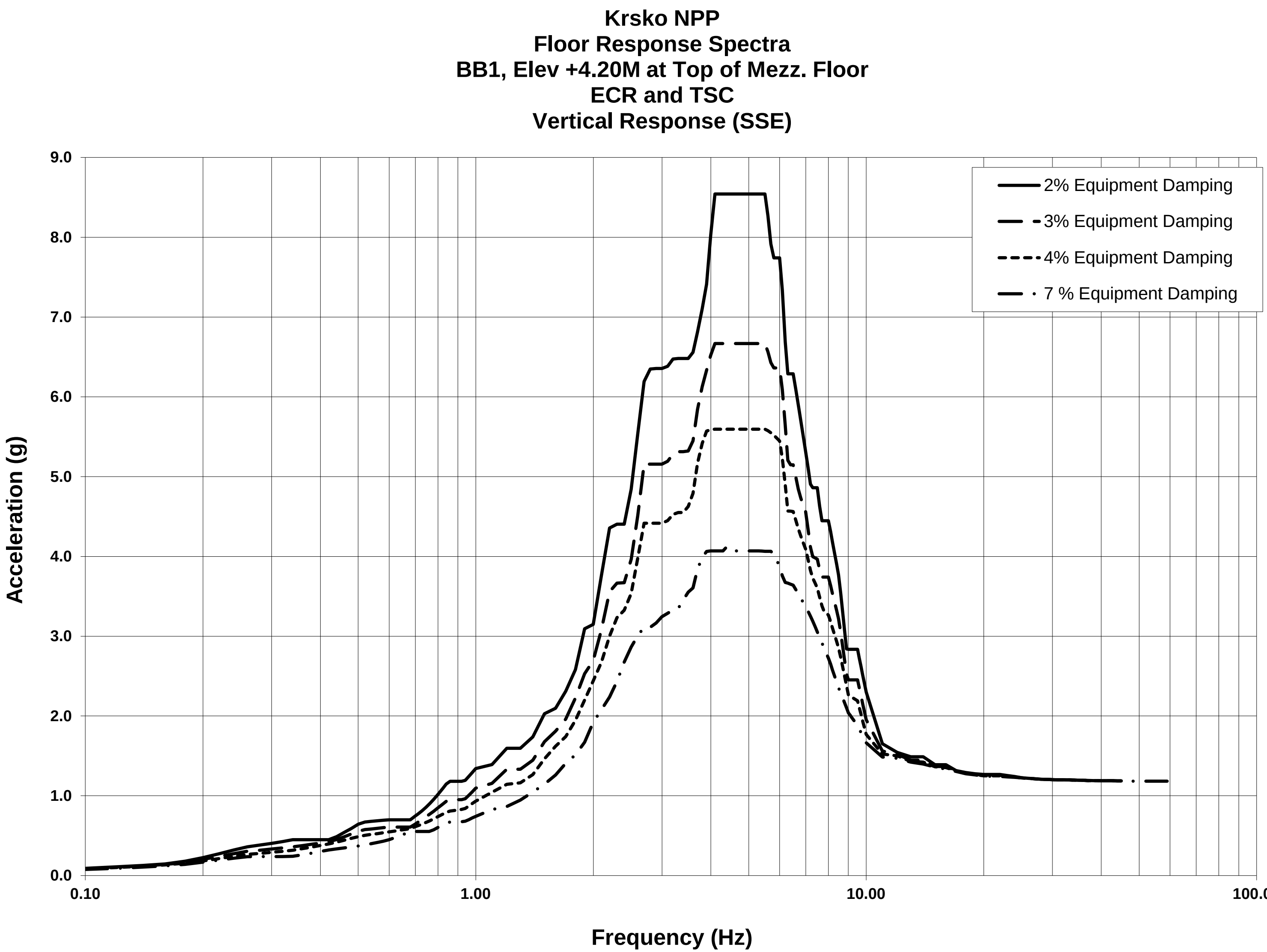
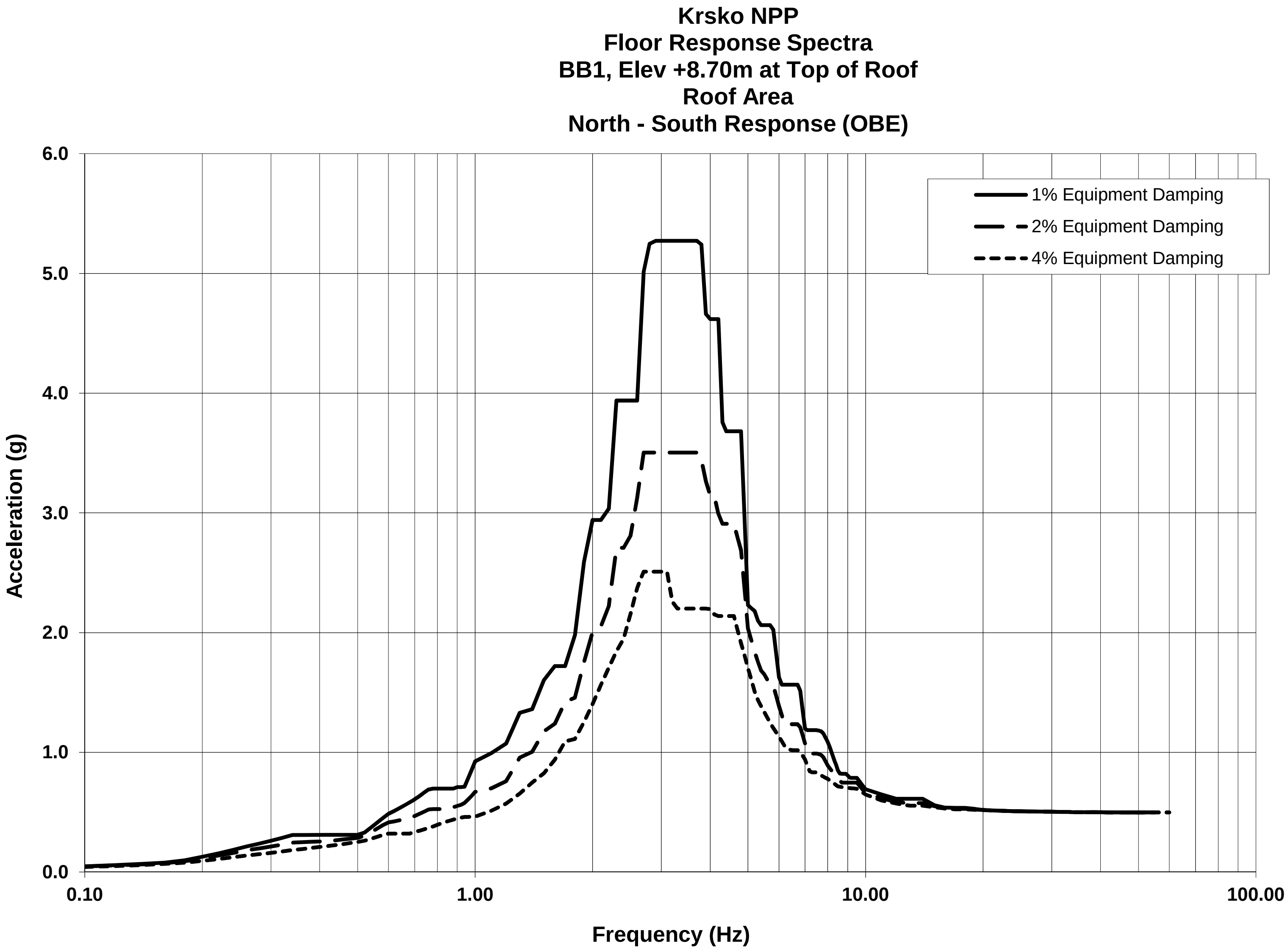
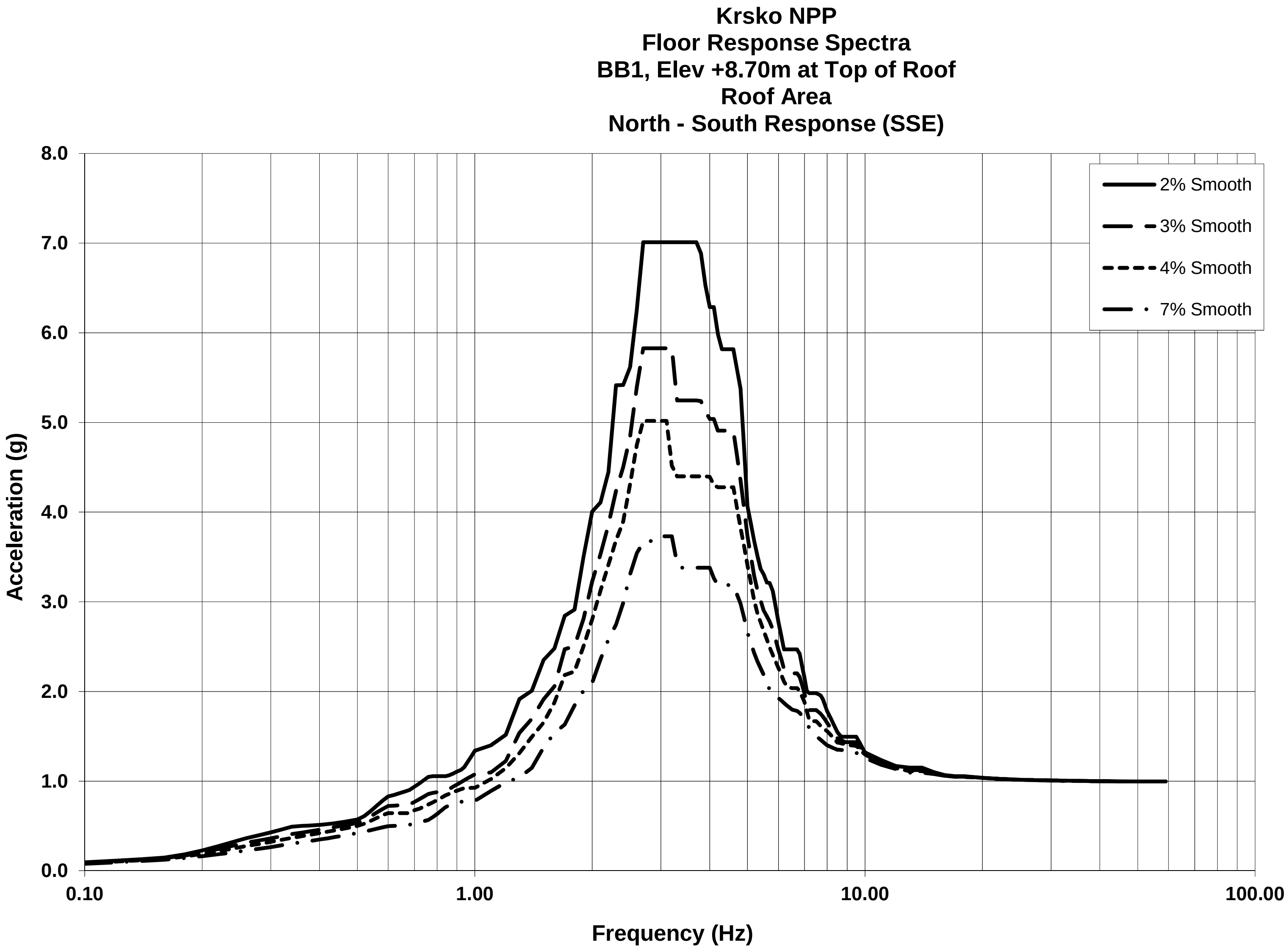

Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
Vertical Response (OBE)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.10
1.00
10.00
100.00

Figure A181


Krsko NPP
Floor Response Spectra
BB1, Elev +4.20M at Top of Mezz. Floor
ECR and TSC
Vertical Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.10
1.00
10.00
100.00



Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
North - South Response (OBE)
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
North - South Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Smooth
3% Smooth
4% Smooth
7% Smooth
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.10
1.00
10.00
100.00

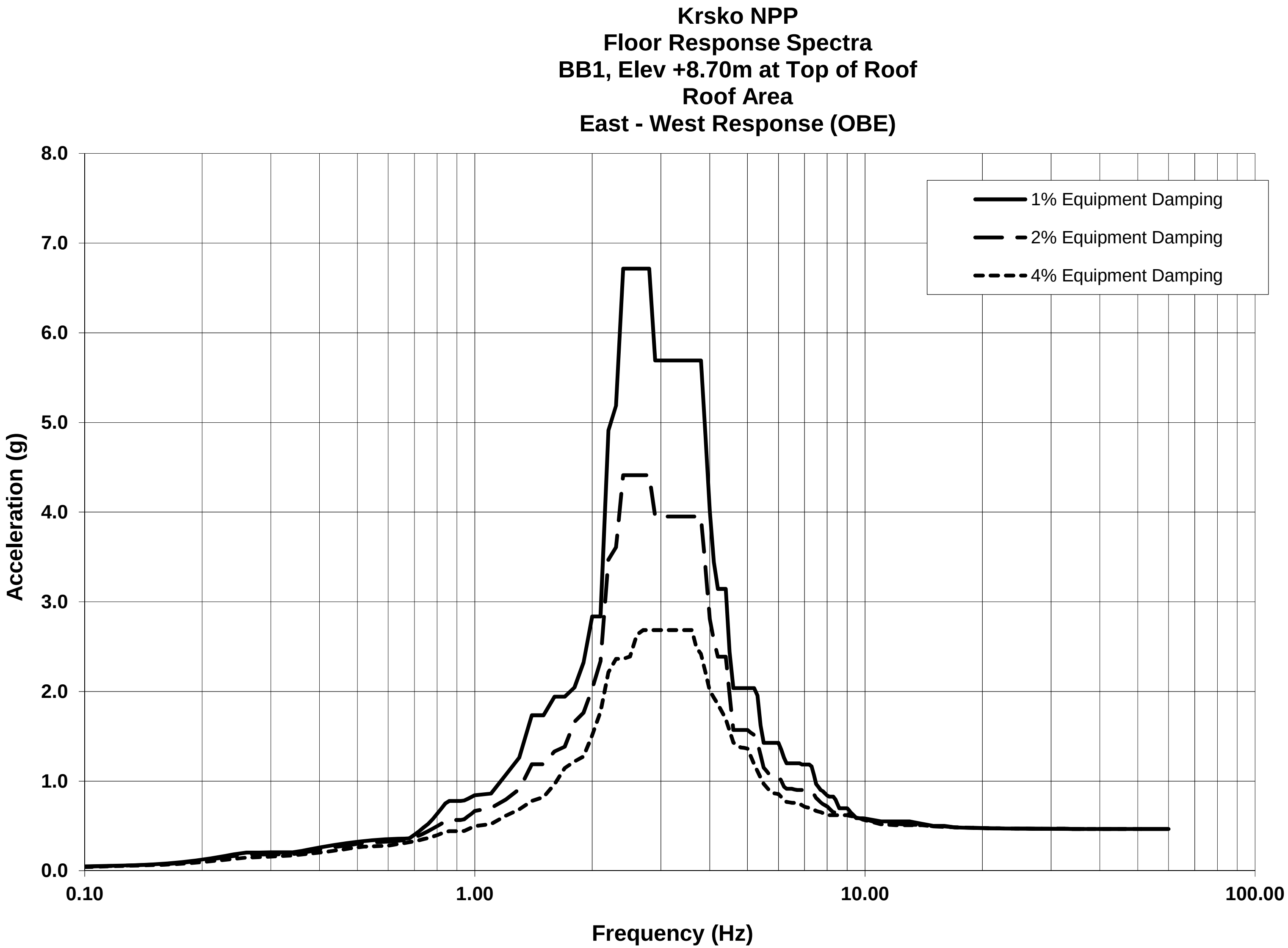
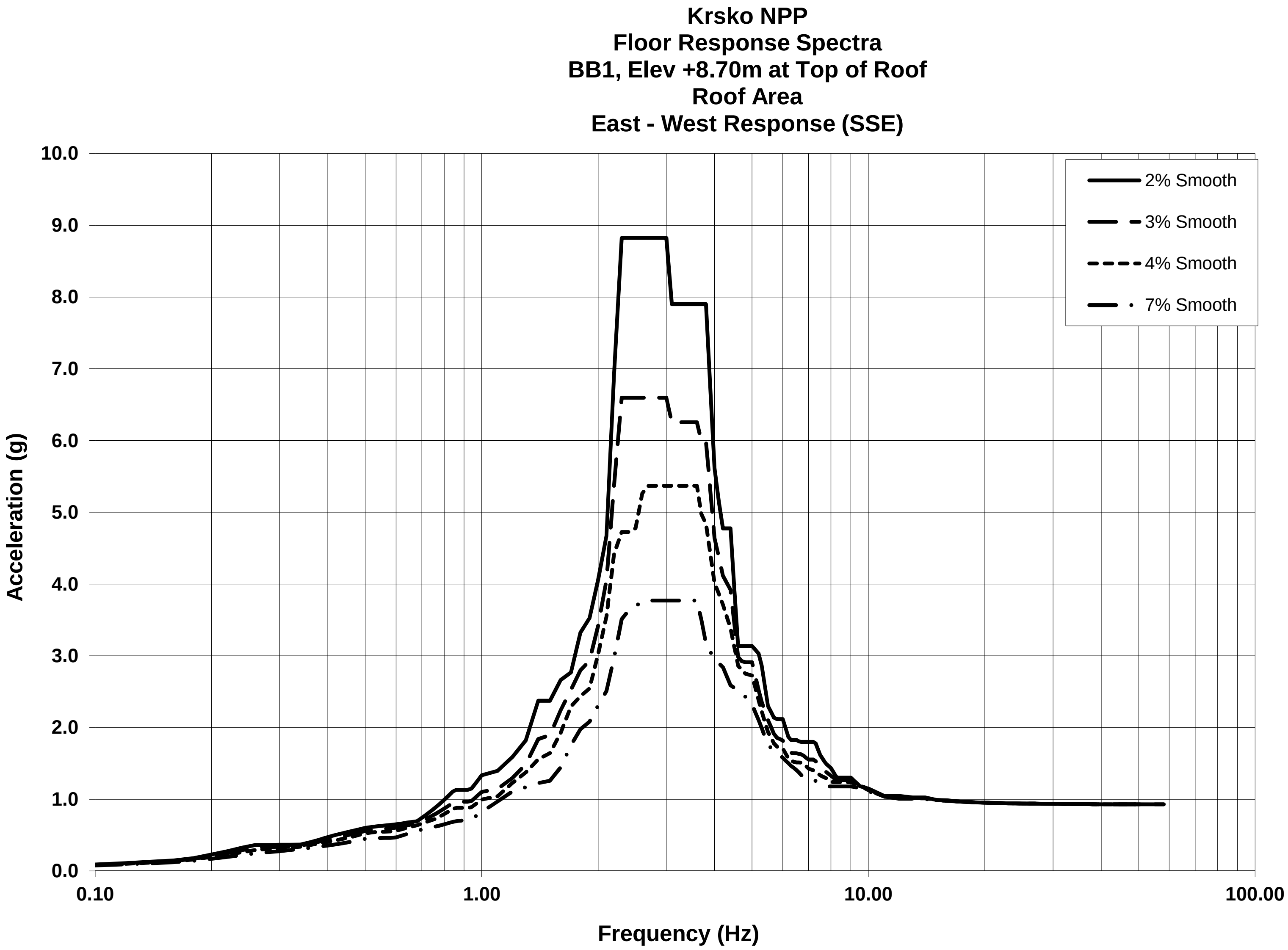
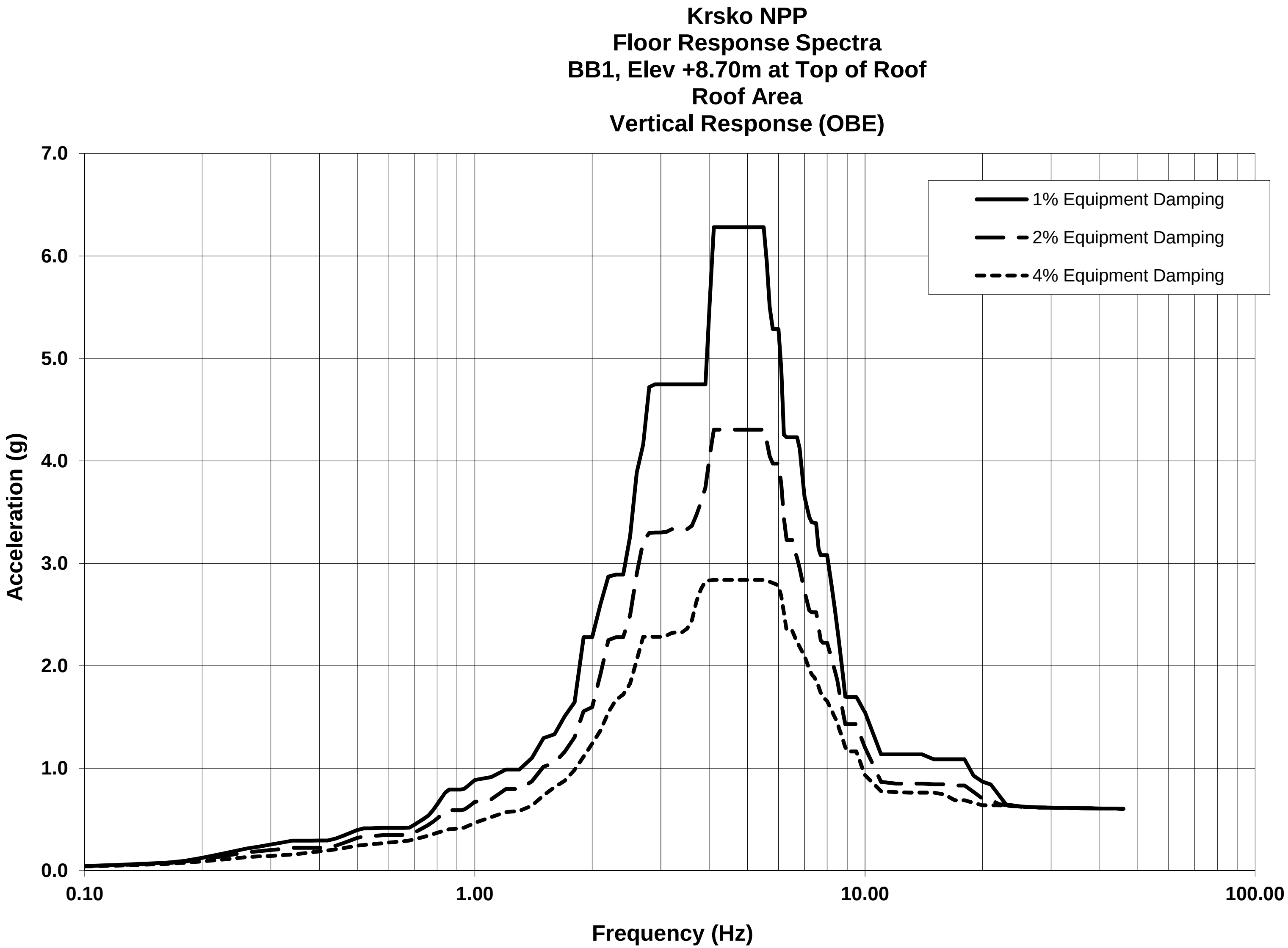
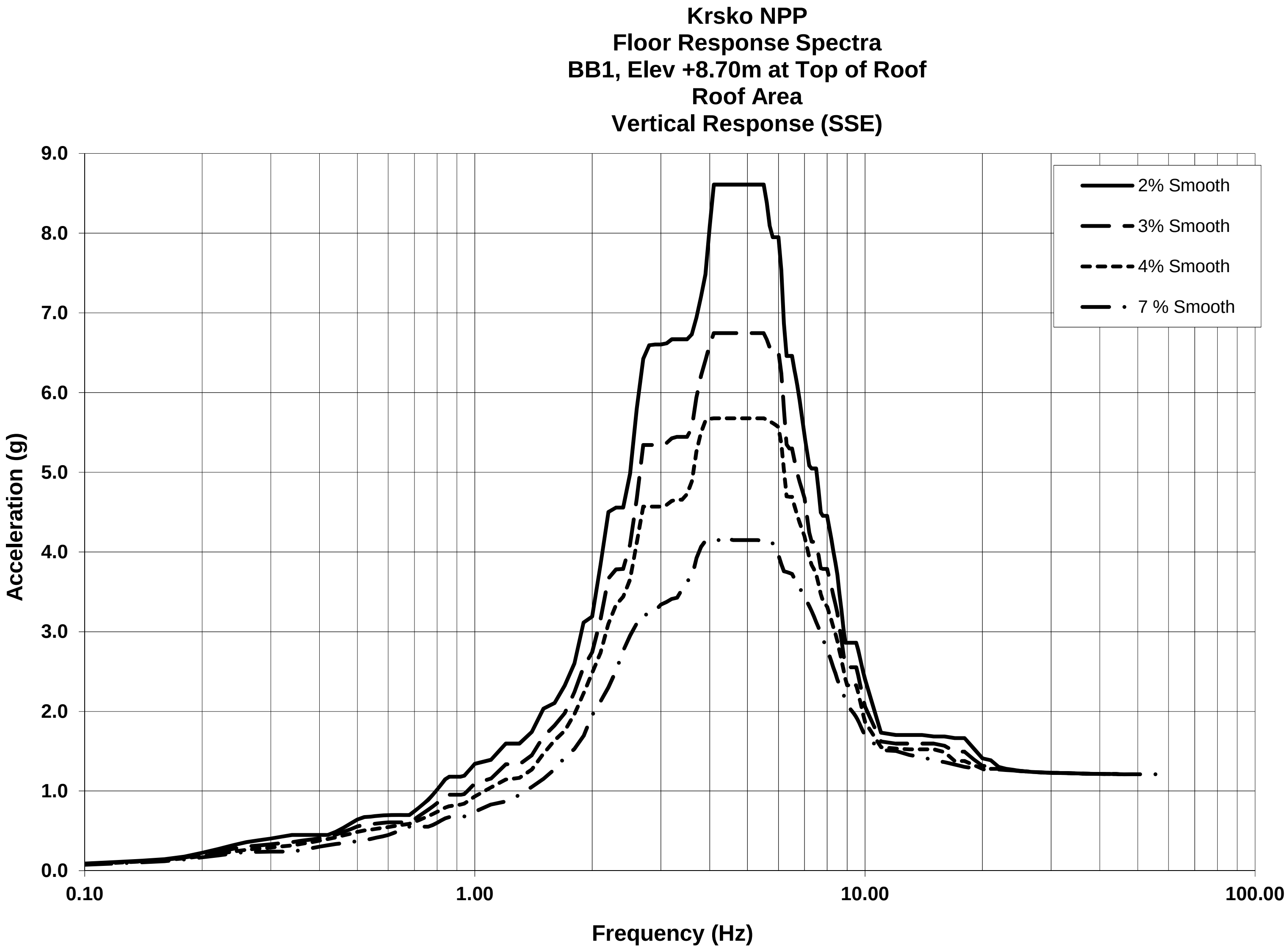
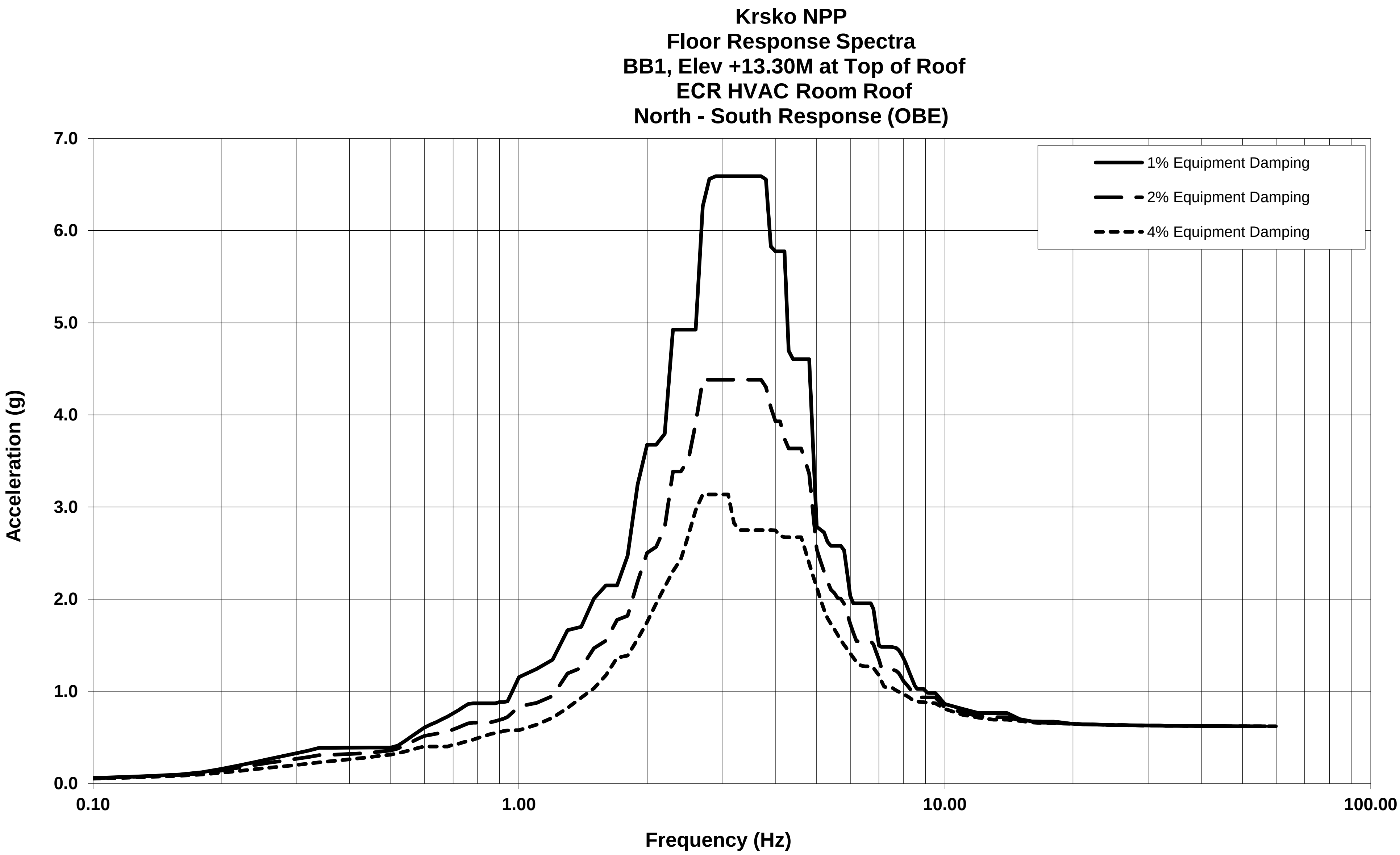

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
East - West Response (OBE)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.10
1.00
10.00
100.00

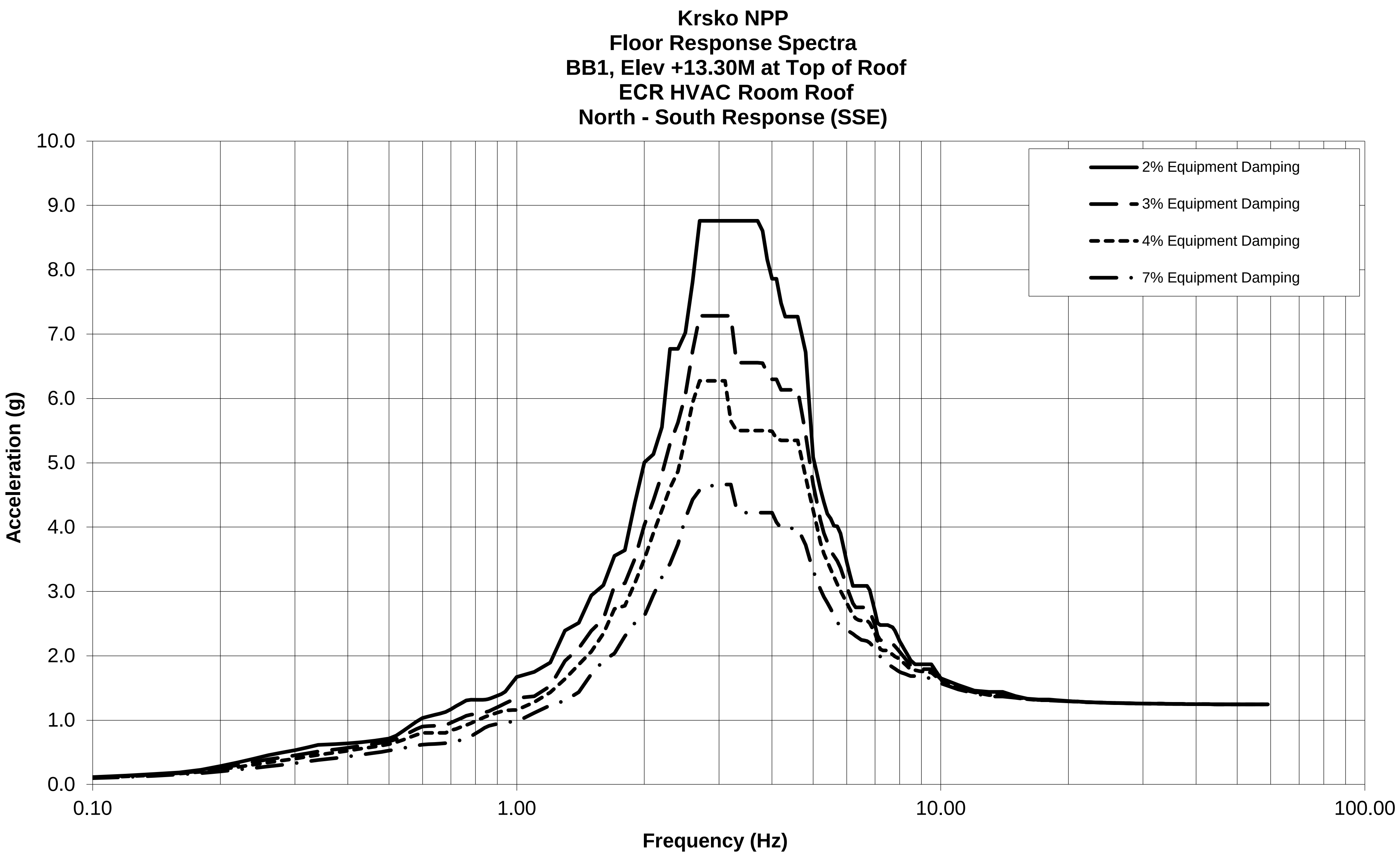
Figure A185

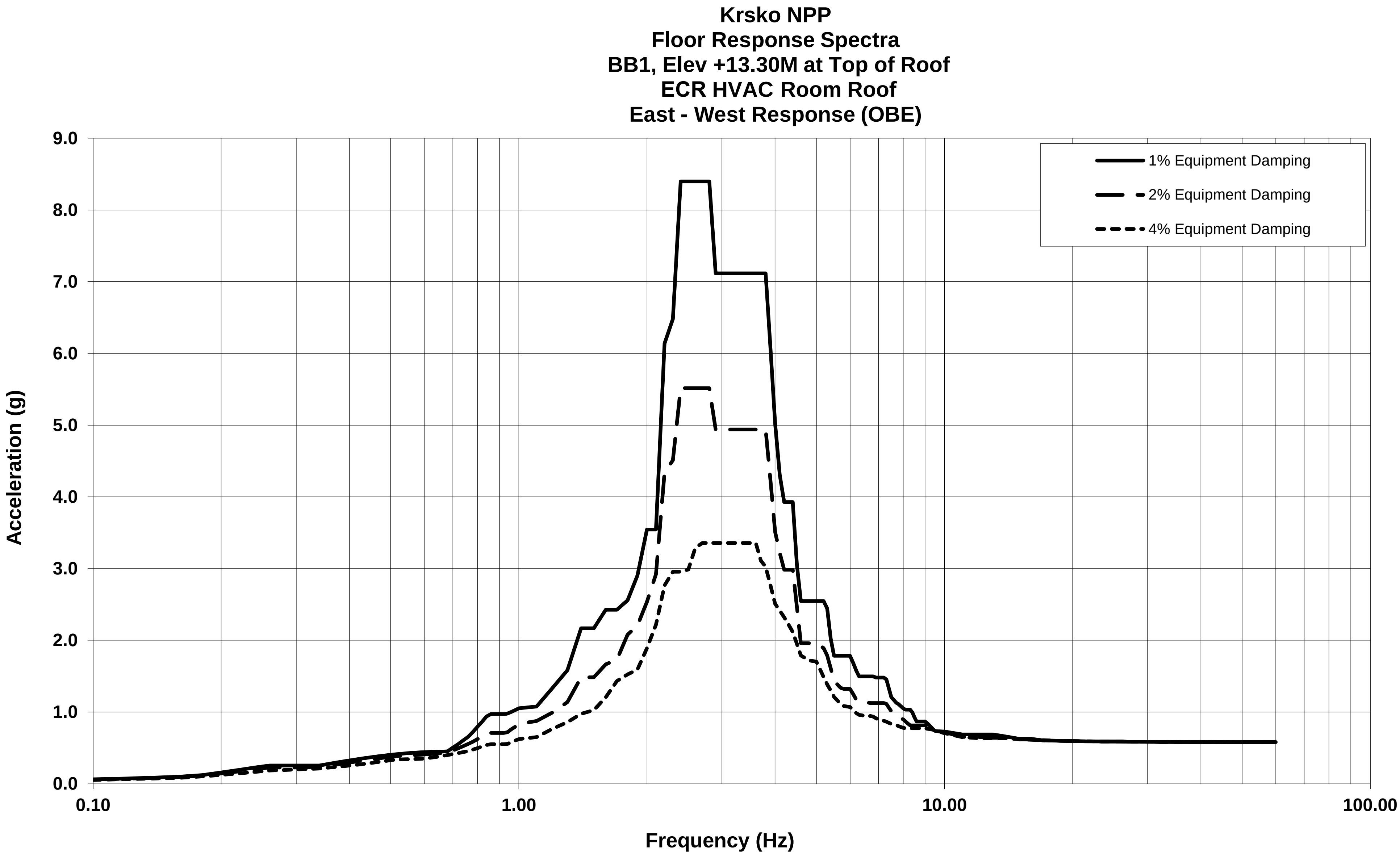

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
East - West Response (SSE)
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
2% Smooth
3% Smooth
4% Smooth
7% Smooth

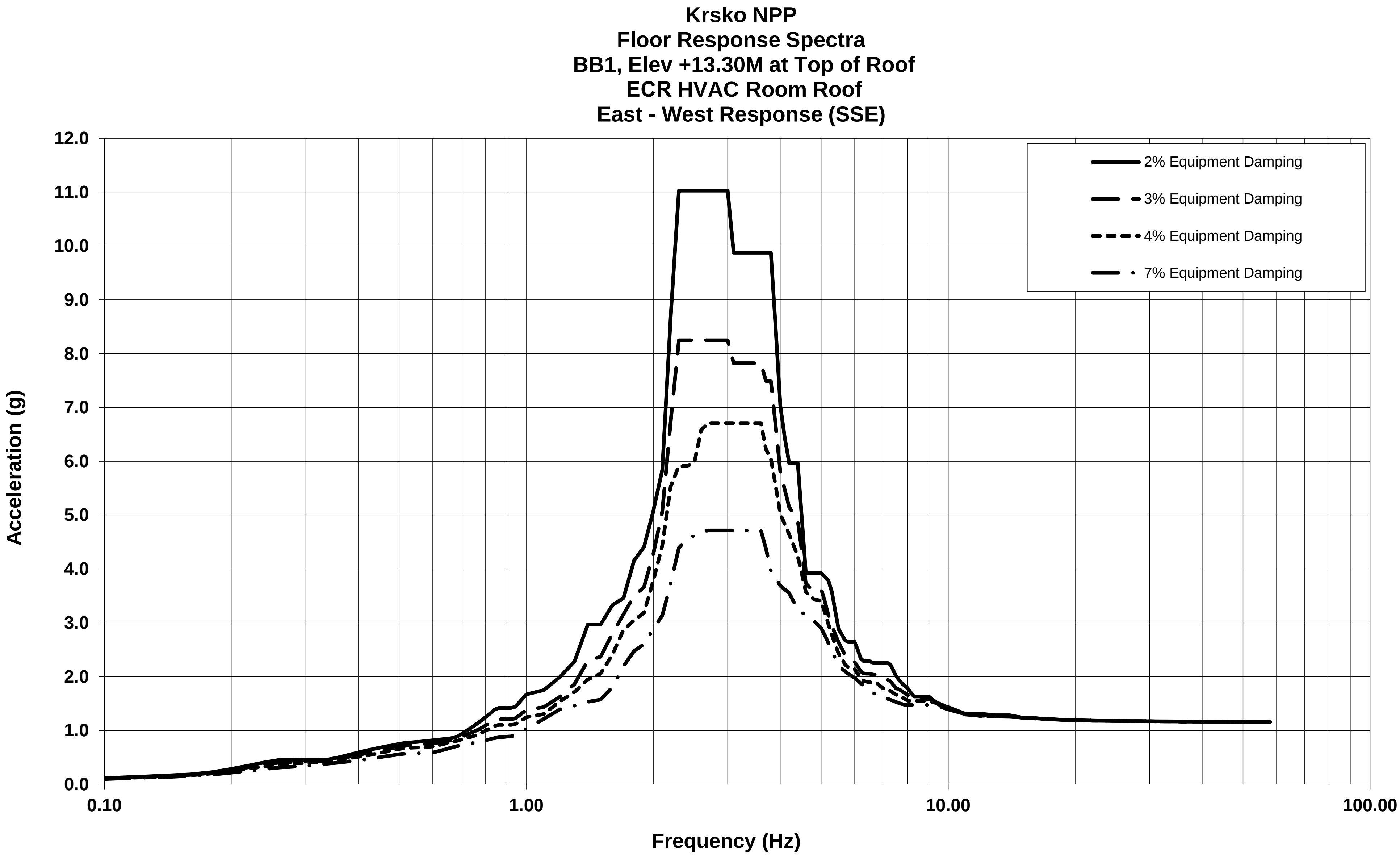

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
Vertical Response (OBE)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

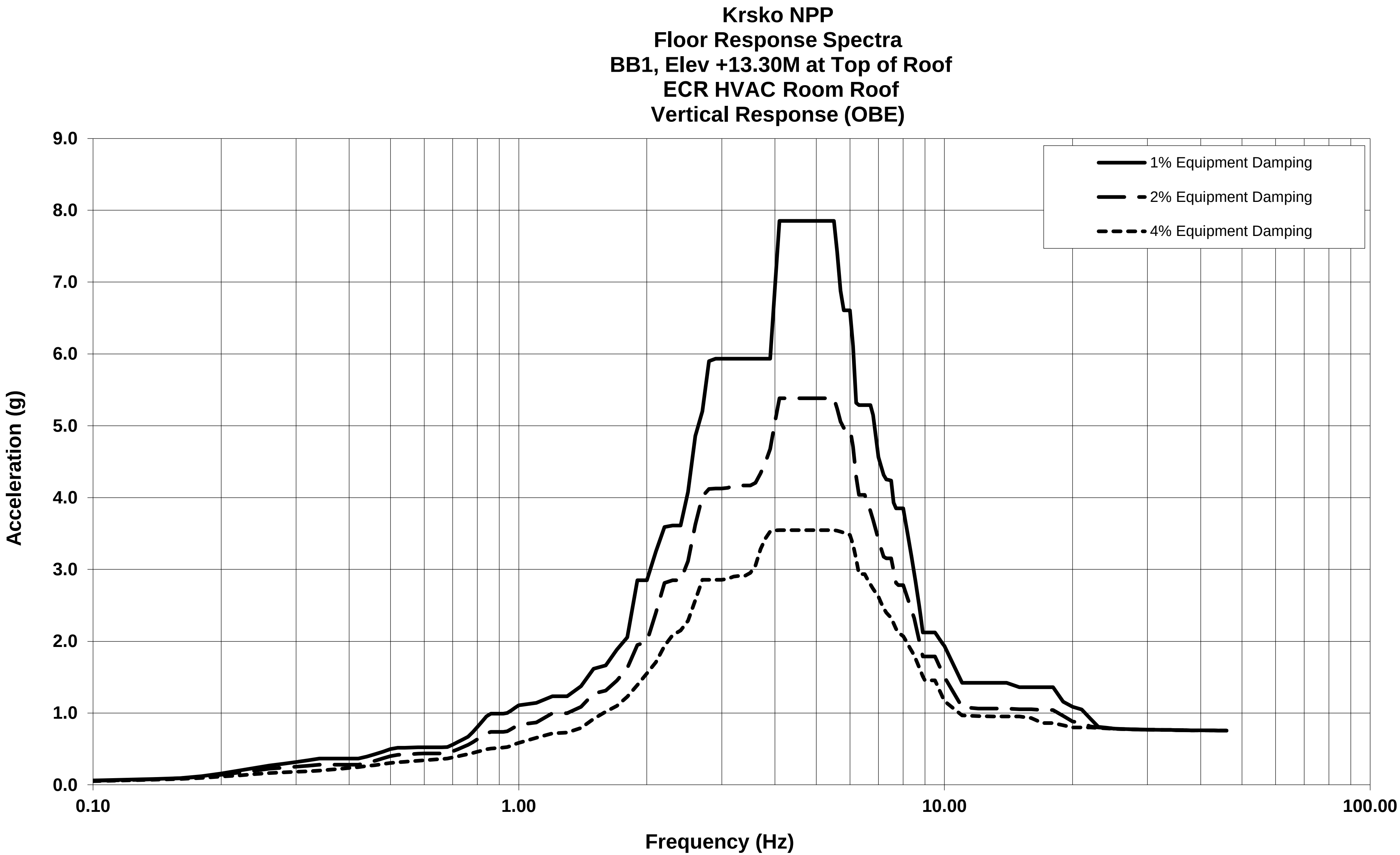

Krsko NPP
Floor Response Spectra
BB1, Elev +8.70m at Top of Roof
Roof Area
Vertical Response (SSE)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.10
1.00
10.00
100.00
Frequency (Hz)
2% Smooth
3% Smooth
4% Smooth
7 % Smooth


Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
North - South Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)


Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
North - South Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
East - West Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00
Frequency (Hz)


Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
East - West Response (SSE)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
0.10
1.00
10.00
100.00


Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
Vertical Response (OBE)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.10
1.00
10.00
100.00

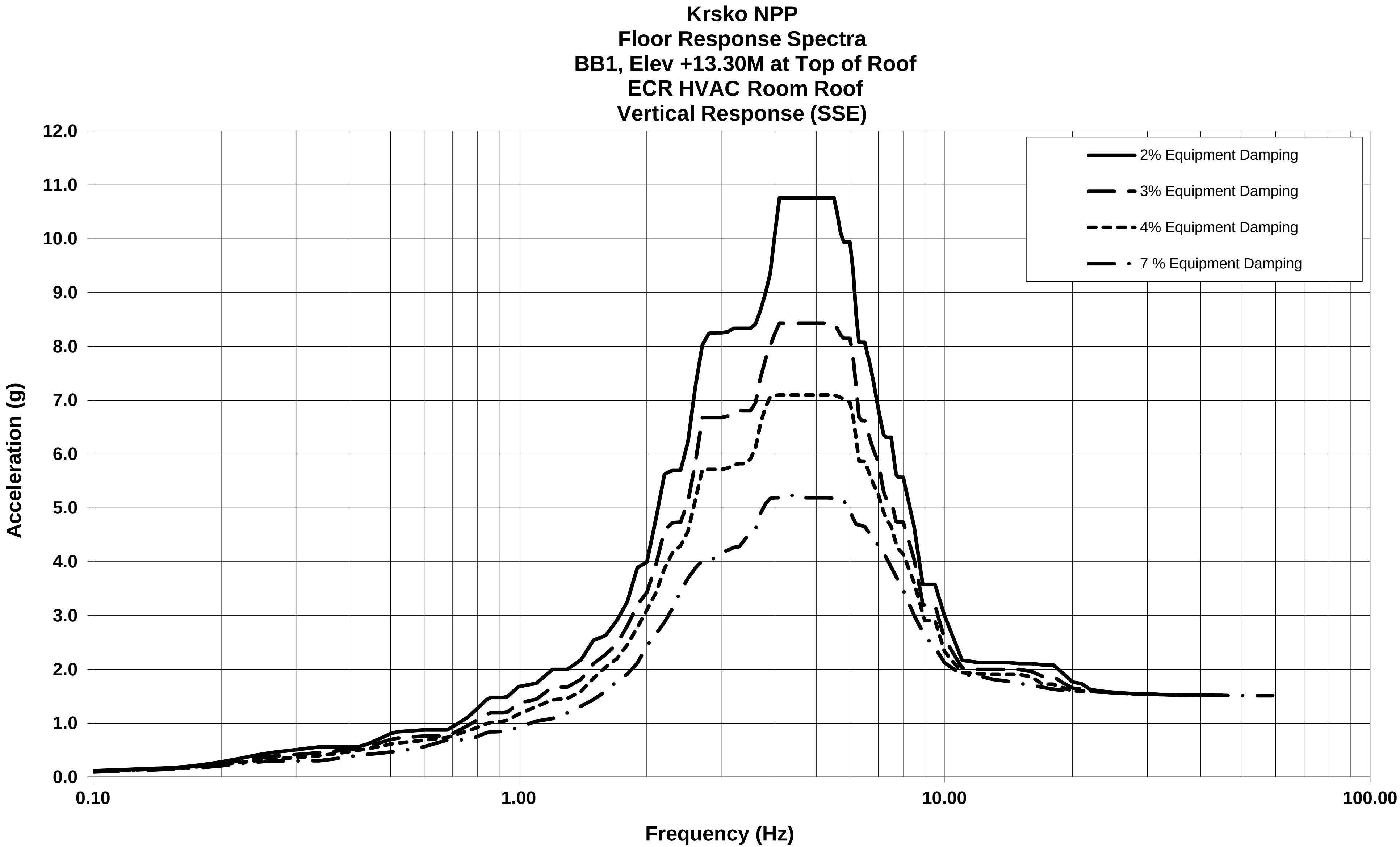

Krsko NPP
Floor Response Spectra
BB1, Elev +13.30M at Top of Roof
ECR HVAC Room Roof
Vertical Response (SSE)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7 % Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
1.00
10.00
100.00

Figure A194

APPENDIX B

TO

SP-S702-044687-000

FLOOR RESPONSE SPECTRA CURVES FOR SSE FOR MODIFICATIONS ON EXISTING SSCs ON MAIN COMPLEX STRUCTURES AND ESSENTIAL SERVICE WATER INTAKE STRUCTURE

GROUND RESPONSE SPECTRA FOR SSE FOR MODIFICATIONS ON EXISTING SSC NORTH/SOUTH, EAST/WEST & VERTICAL

KRSKO NUCLEAR POWER PLANT
KRSKO, SLOVENIA

Floor Response Spectra Figure Matrix
for
Main Island

Building	**Elevation**	**FRS Figure #**		
		SSE for modifications on existing SSC		
		North-South	**East-West**	**Vertical**
Reactor Building Base	98.78 m	B1	B2	B3
Interior Structure	100.3 m	B4	B5	B6
	107.62 m	B7	B8	B9
	115,55 m	B10	B11	B12
Containment Vessel	127.48 m	B13	B14	B15
	140.24m	B16	B17	B18
	153.29 m	B19	B20	B21
Shield Building	136.21 m	B22	B23	B24
	156.74 m	B25	B26	B27
Auxiliary Building	100.3 m	B28	B29	B30
	107.62 m	B31	B32	B33
	115.55 m	B34	B35	B36
	123.17 m	B37	B38	B39
Intermediate Building	100.3 m	B40	B41	B42
	107.62 m	B43	B44	B45
	115.55 m	B46	B47	B48
	123.17 m	B49	B50	B51
Control Building	100.3 m	B52	B53	B54
	107.62 m	B55	B56	B57
	115.55 m	B58	B59	B60
	123.17 m	B61	B62	B63
Fuel Handling Building	100.3 m	B64	B65	B66
	107.62 m	B67	B68	B69
	115.55 m	B70	B71	B72
	134.35 m	B73	B74	B75
Drum Storage Area	100.3 m	B76	B77	B78
	107.62 m	B79	B80	B81
	115.55 m	B82	B83	B84
	123.17 m	B85	B86	B87

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g’s.
2. “SSE spectra for modifications on existing SSC” represent the envelope of the FRS based on 0.6g peak ground acceleration (2xSSE) with USAR soil damping and SSE FRS.
3. For Component Cooling Building FRS, use the FRS for the Auxiliary Building.

Floor Response Spectra Figure Matrix
for
Essential Service Water Intake Structure

ESWIS Location	Elevation	FRS Figure #		
		SSE for modifications on existing SSC		
		North-South	East-West	Vertical
Water Intake Base	145.00 m	B88	B89	B90
Top of water Intake	157.10 m	B91	B92	B93
Roof	162.50 m	B94	B95	B96

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g's.
2. "SSE spectra for modifications on existing SSC" represent the envelope of the FRS based on 0.6g peak ground acceleration (2xSSE) with USAR soil damping and SSE FRS.

Floor Response Spectra Figure Matrix
for
Ground Response Spectra

Location	Elevation	FRS Figure #		
		SSE for modifications on existing SSC		
		North-South	East-West	Vertical
Ground	100 m, nominal	B97	B98	B99

Notes:
1. Frequency in Hz (cycles per second) and Acceleration in g's.
2. "SSE spectra for new SSC" represent the envelope of the FRS based on 0.3 and 0.6g peak ground accelerations.

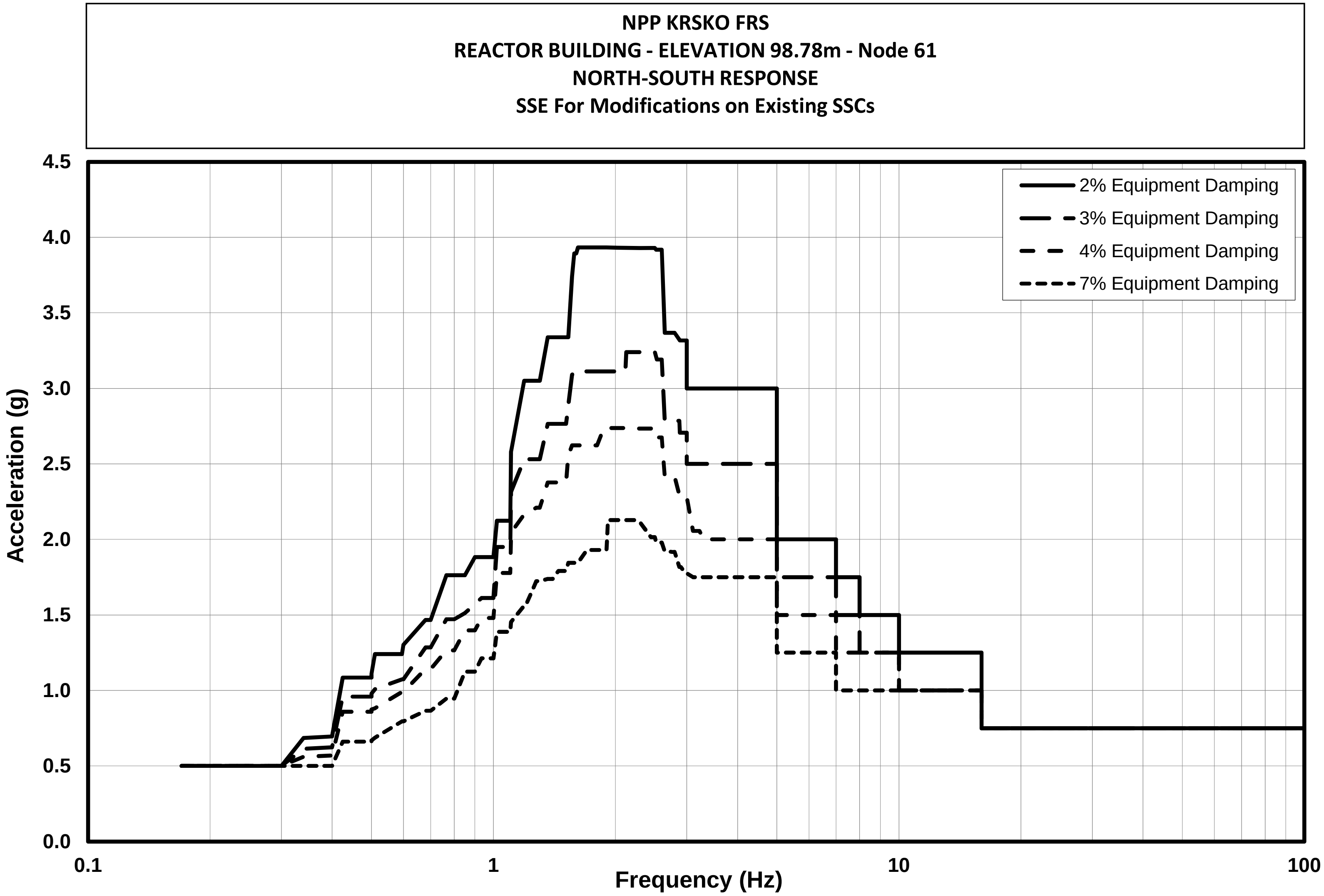
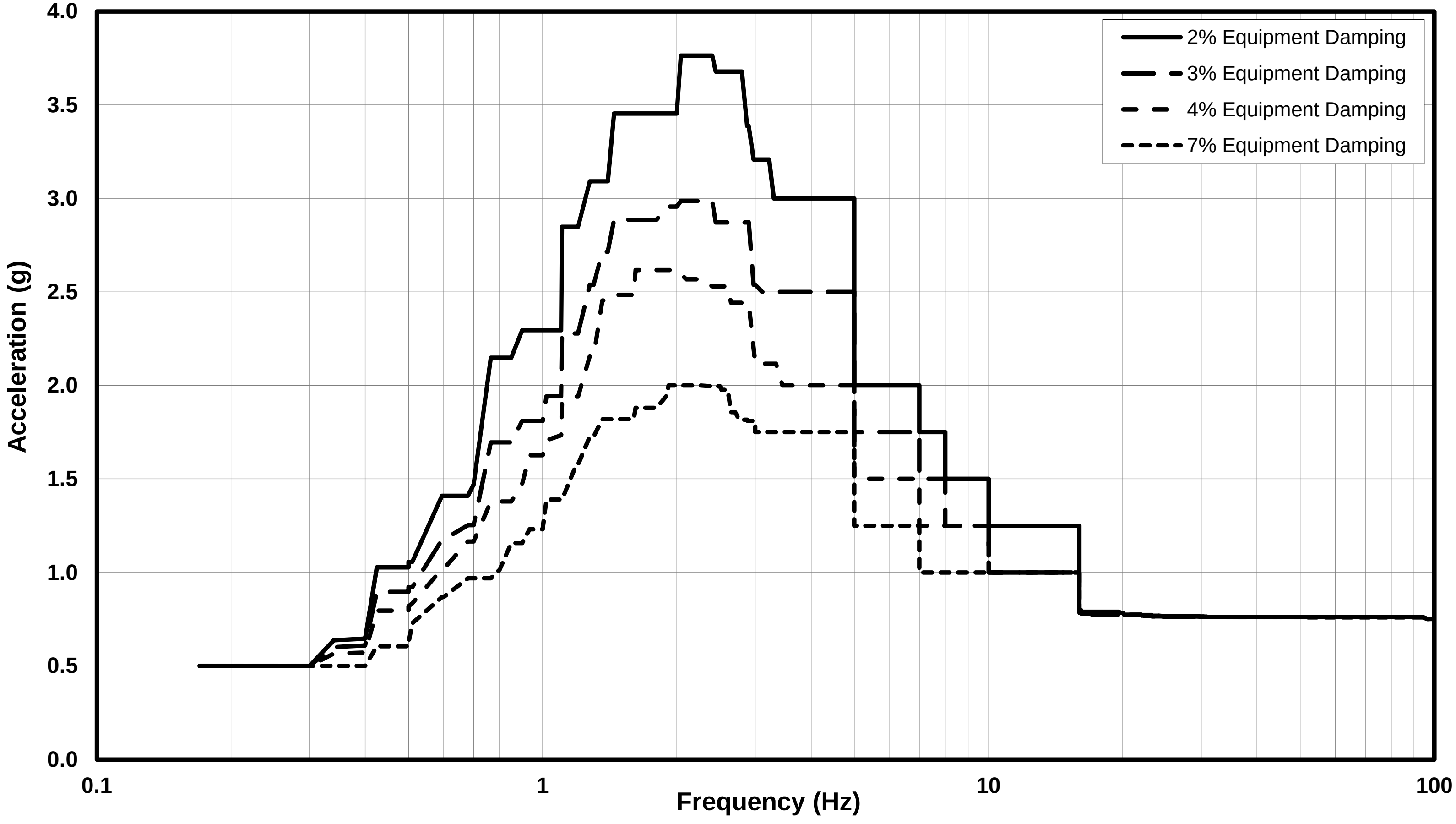

NPP KRSKO FRS
REACTOR BUILDING - ELEVATION 98.78m - Node 61
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B1

NPP KRSKO FRS
REACTOR BUILDING - ELEVATION 98.78m - Node 61
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs



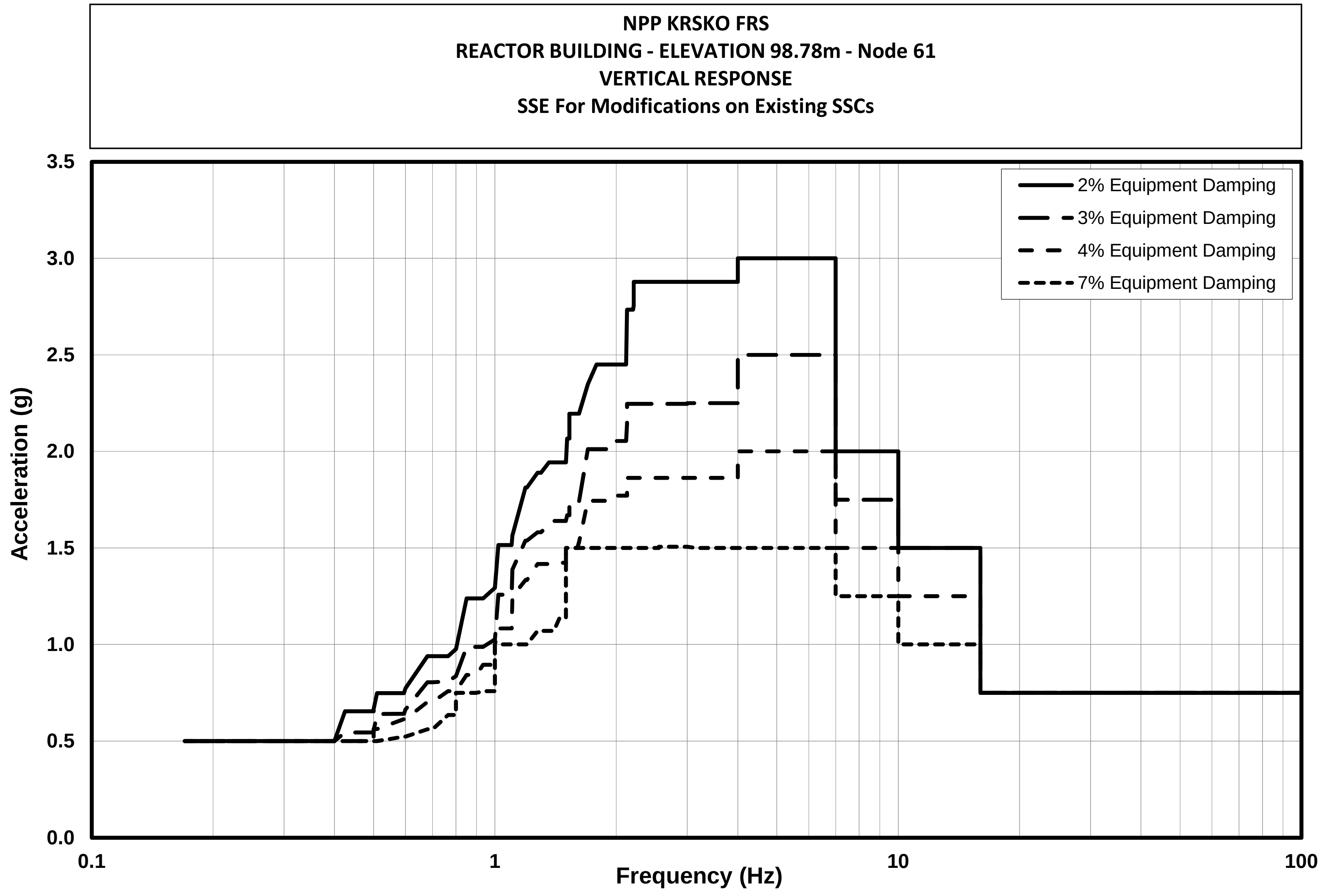
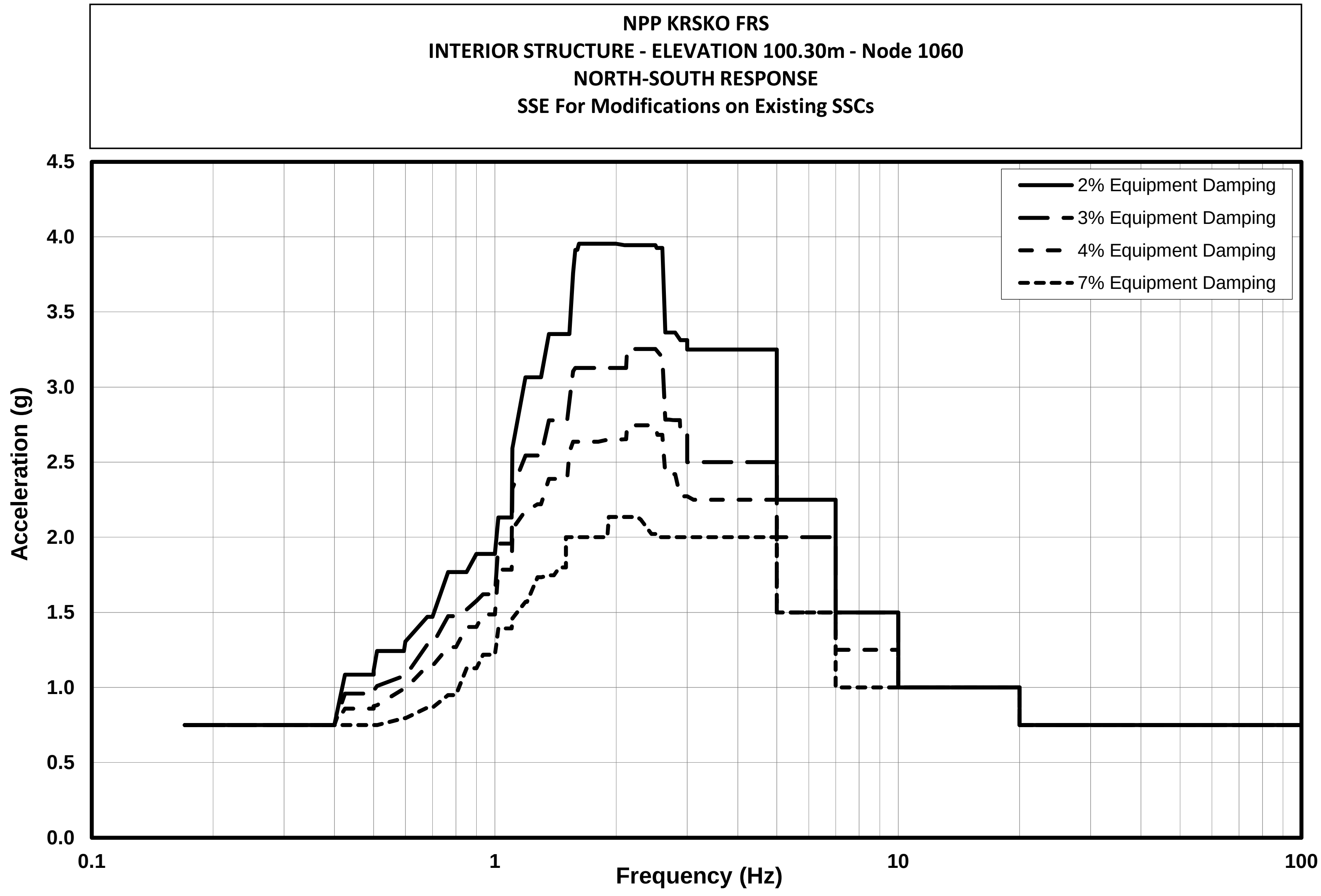
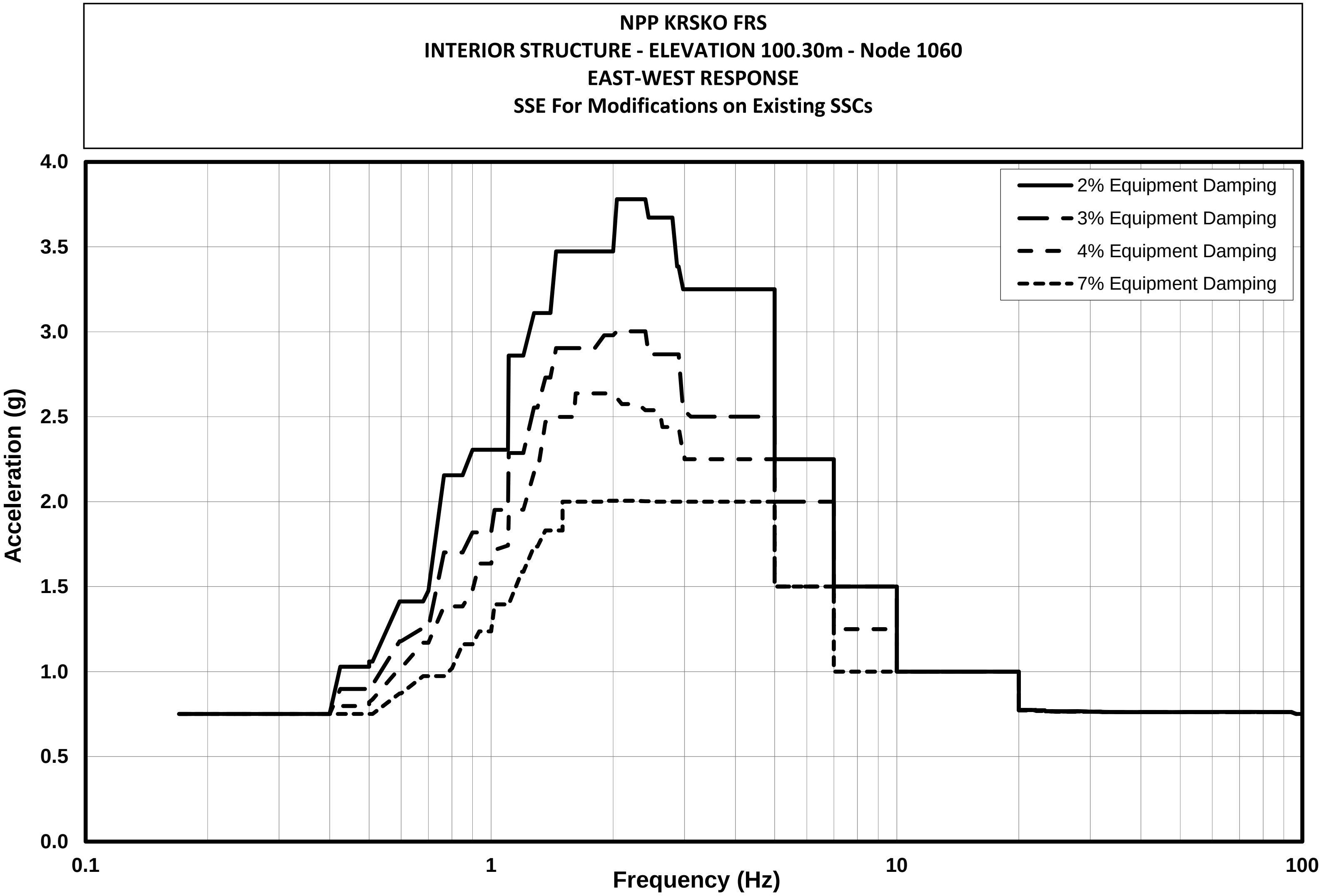
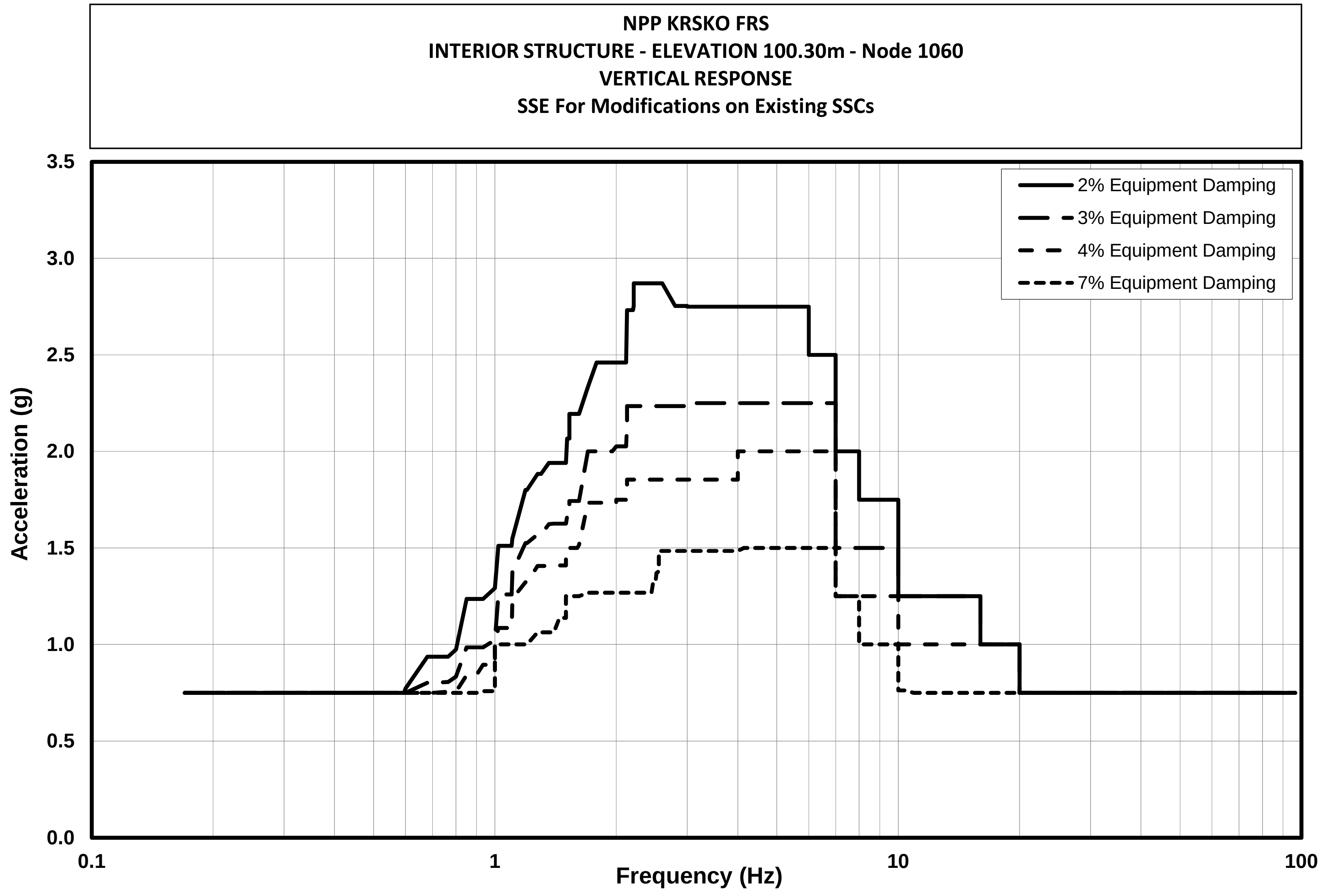

NPP KRSKO FRS
REACTOR BUILDING - ELEVATION 98.78m - Node 61
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

Figure B3


NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 100.30m - Node 1060
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 100.30m - Node 1060
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 100.30m - Node 1060
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

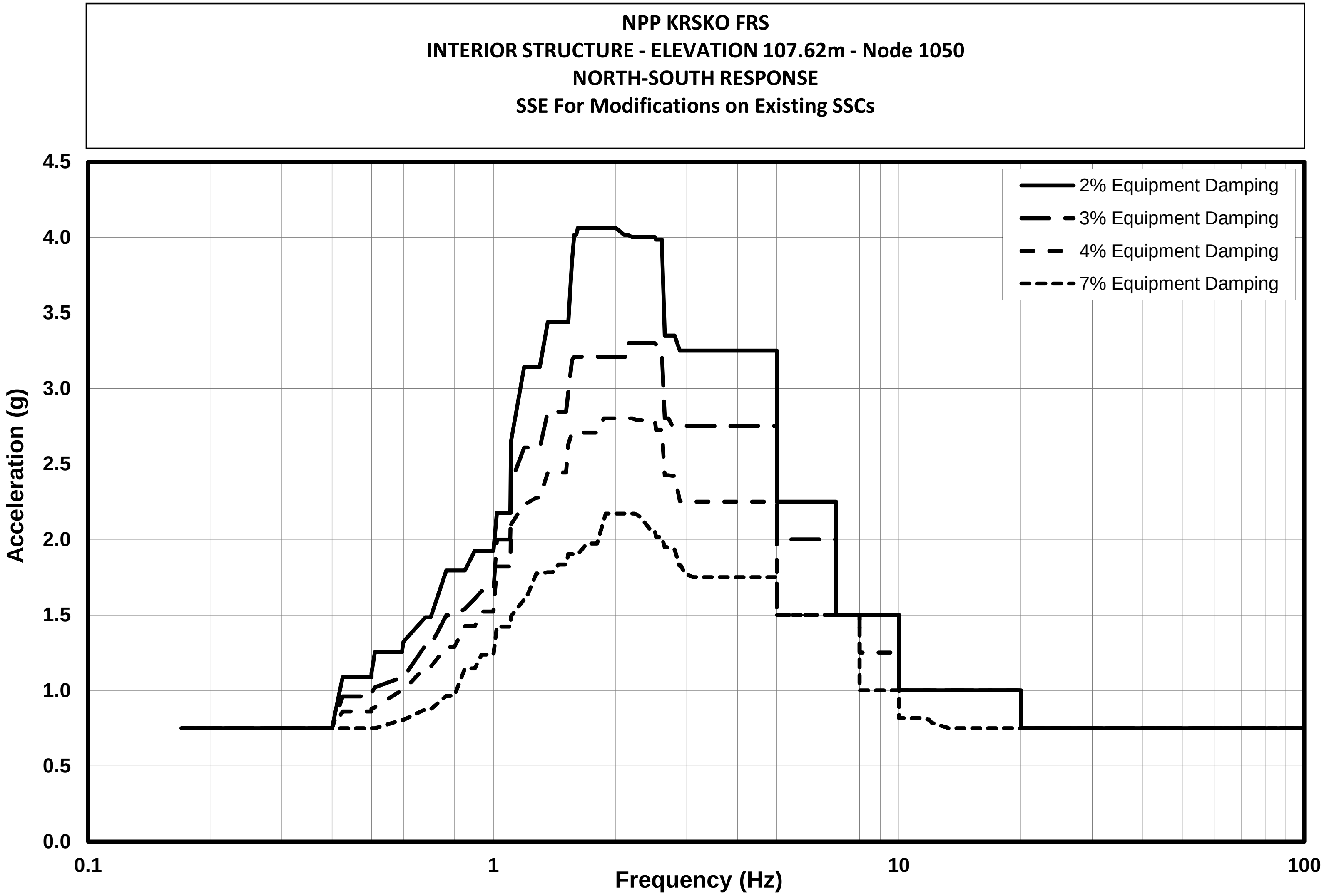
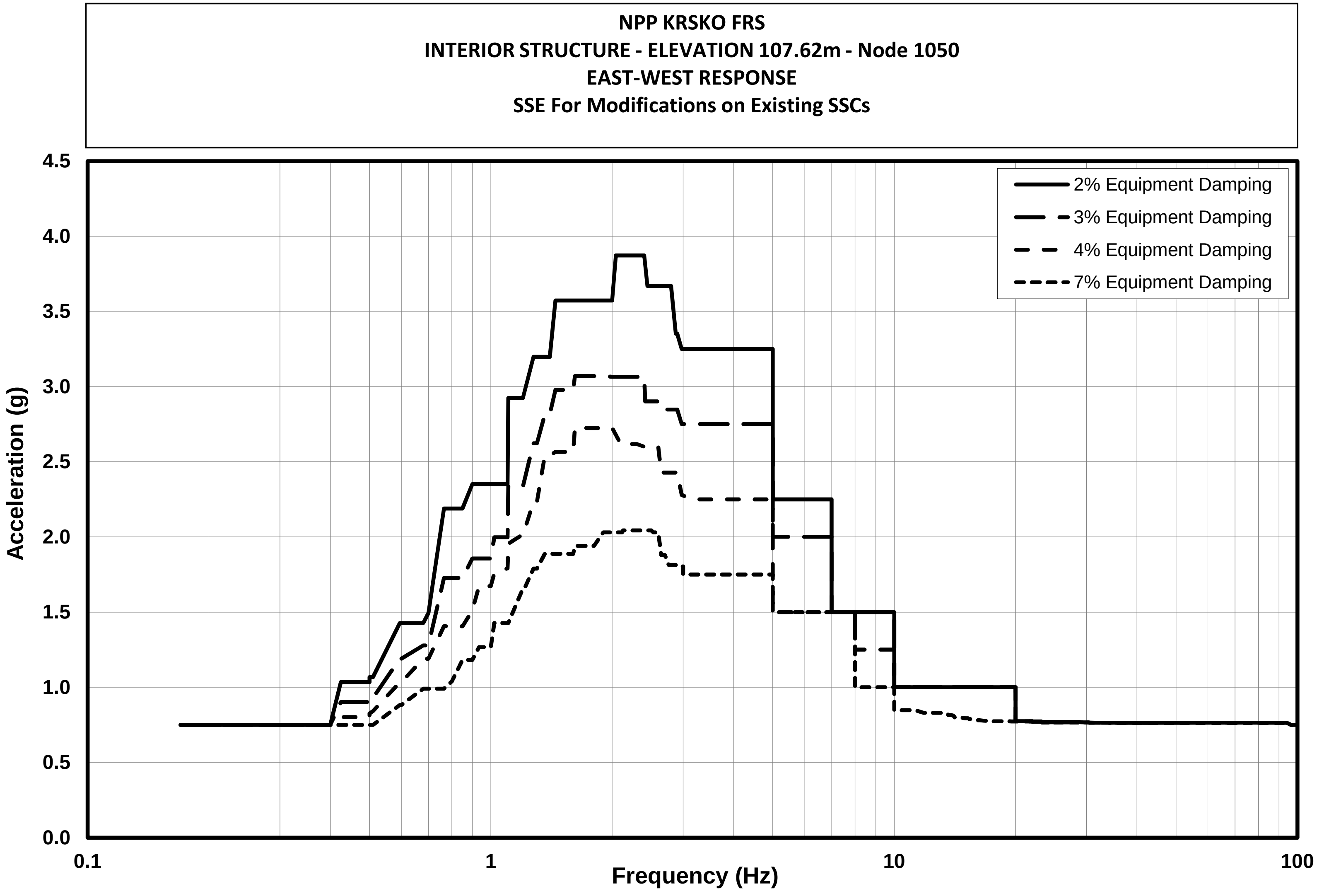

NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 107.62m - Node 1050
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B7


NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 107.62m - Node 1050
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

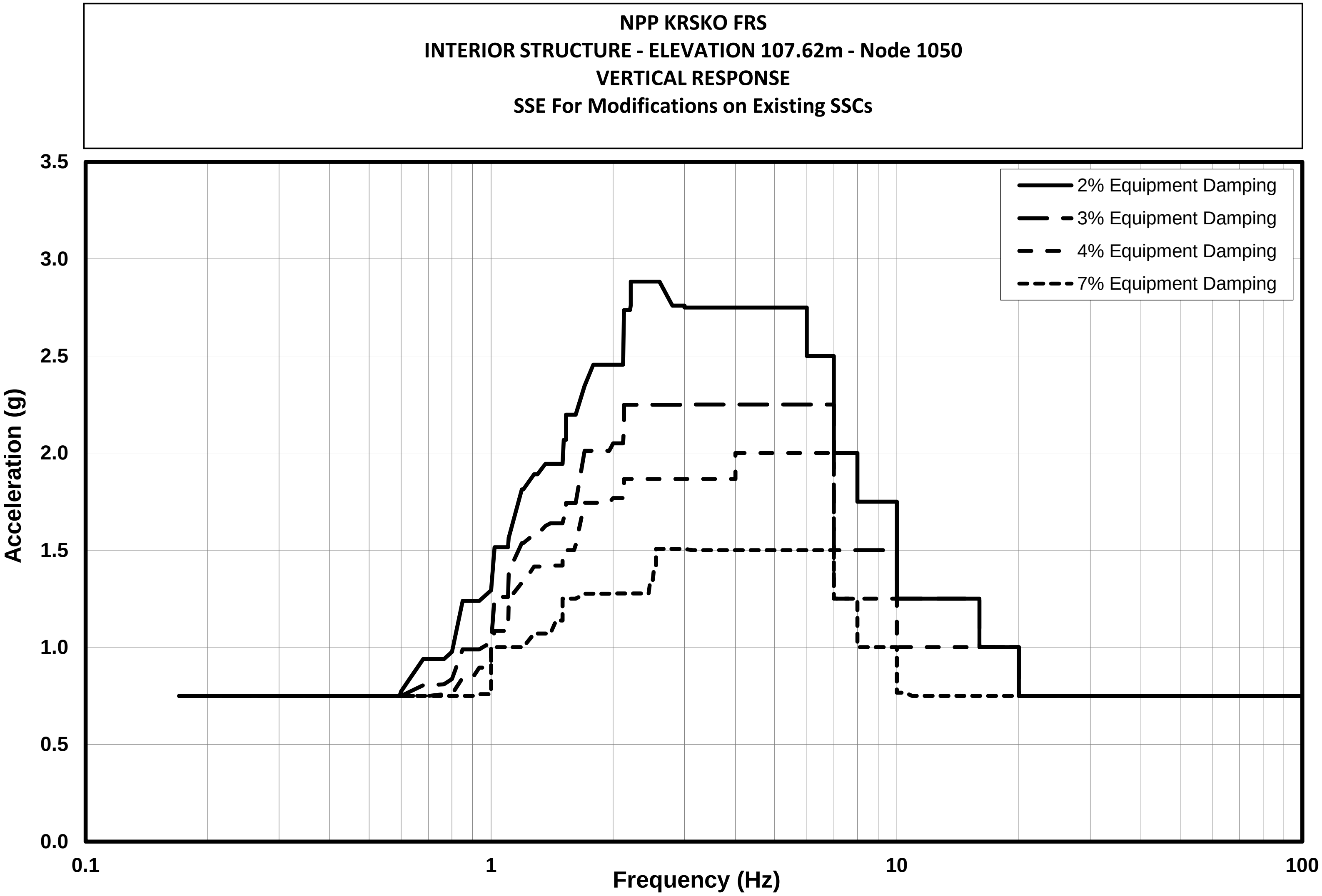

NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 107.62m - Node 1050
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)

Figure B9

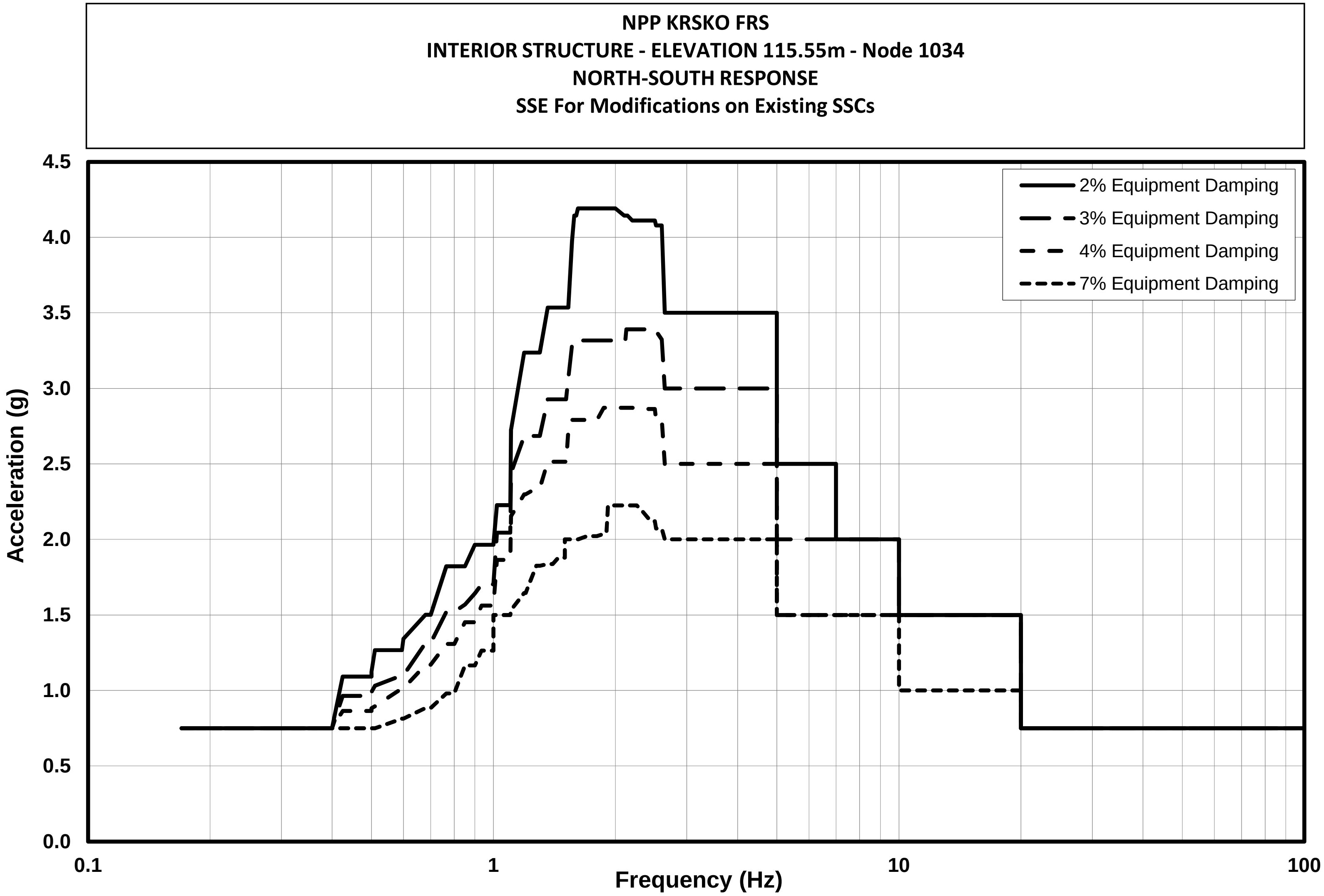
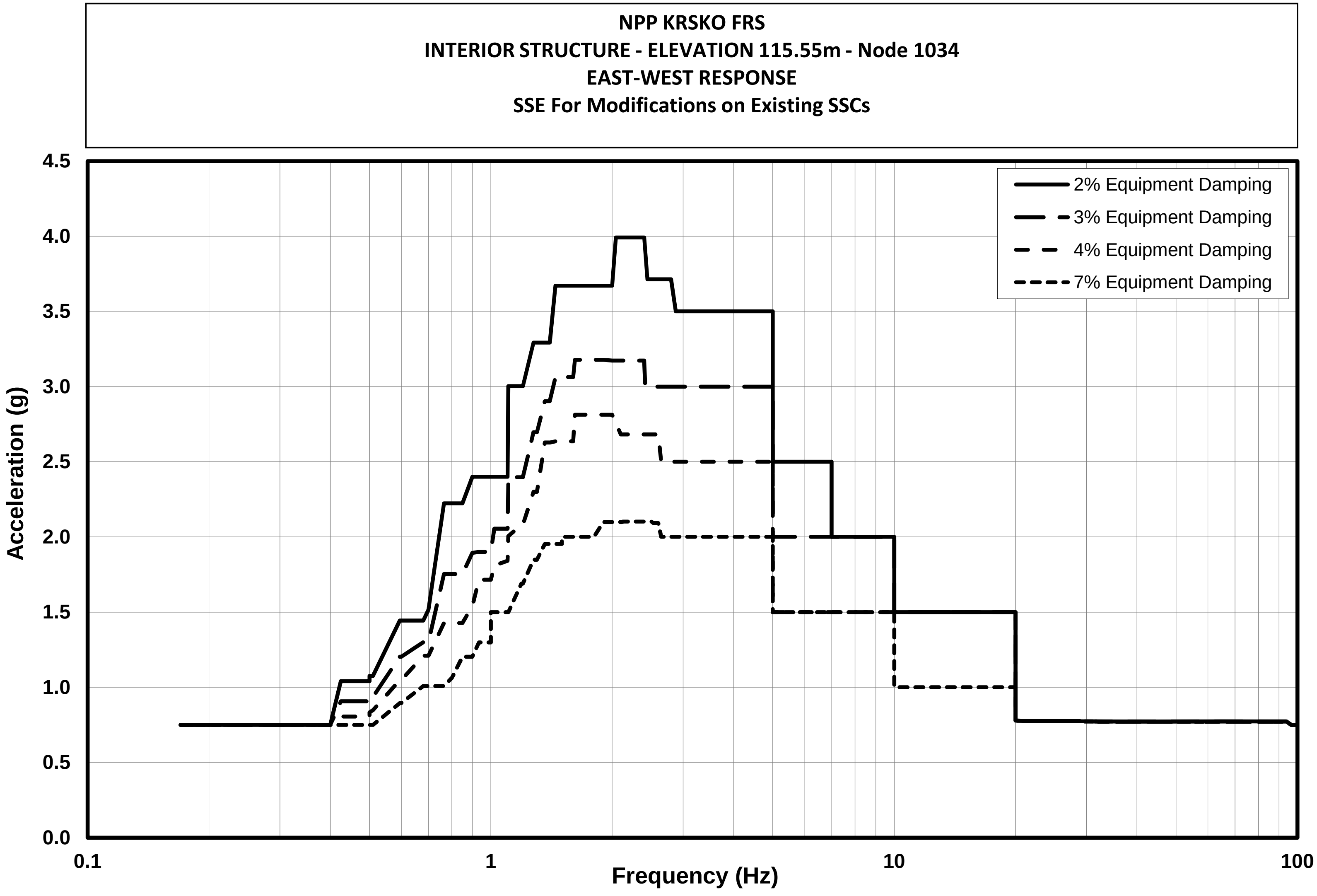

NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 115.55m - Node 1034
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B10


NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 115.55m - Node 1034
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

NPP KRSKO FRS
INTERIOR STRUCTURE - ELEVATION 115.55m - Node 1034
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs

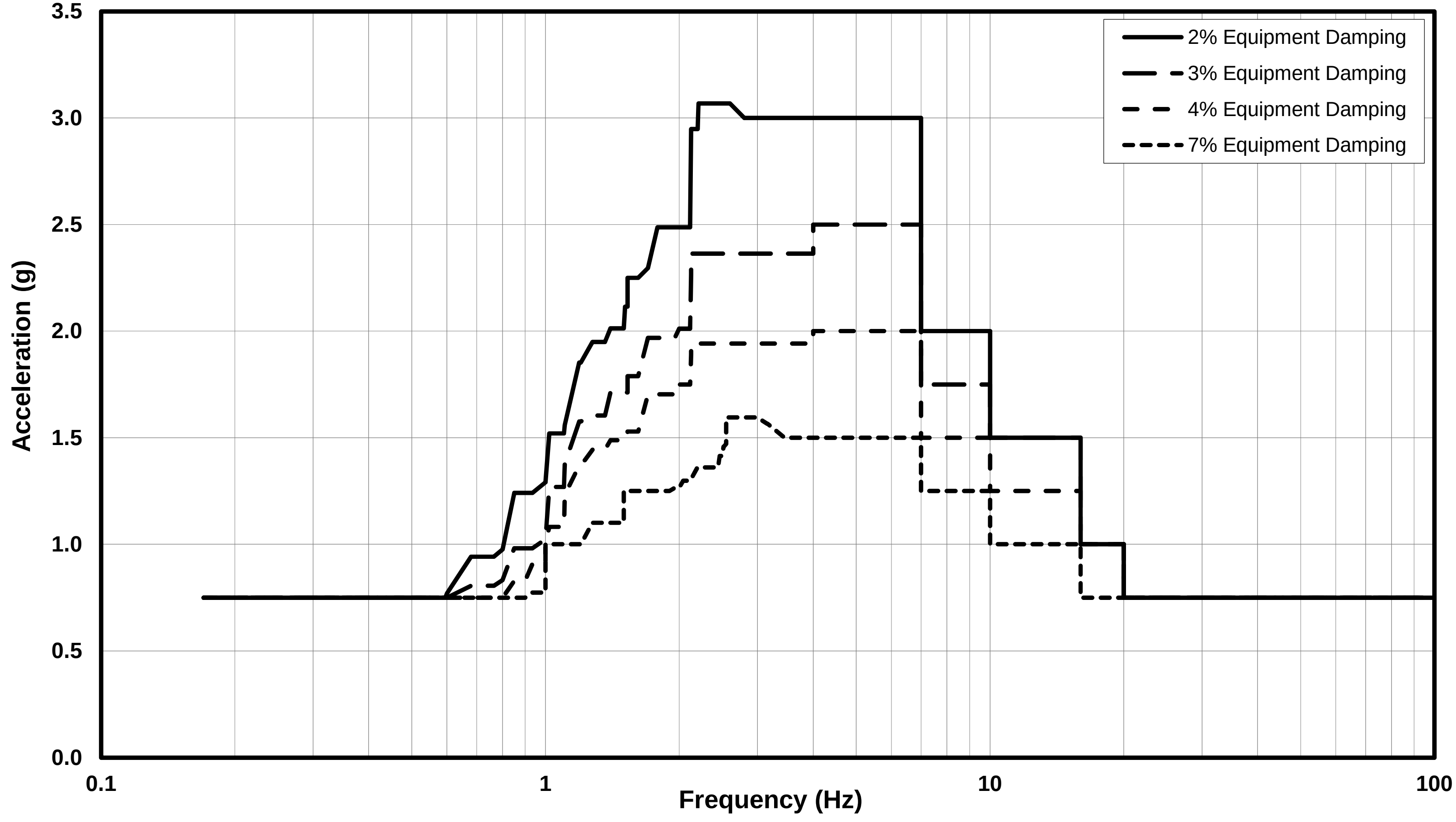
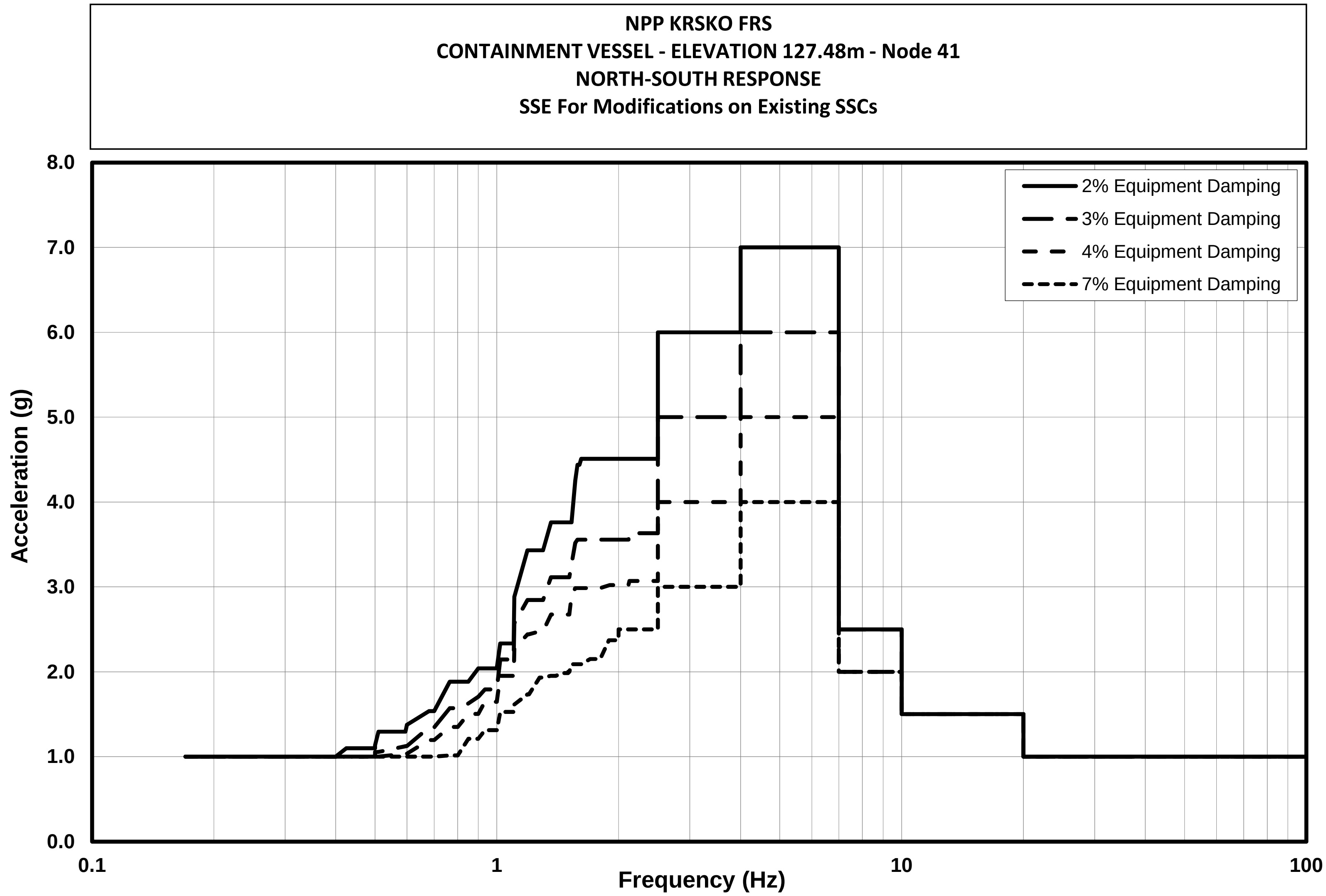
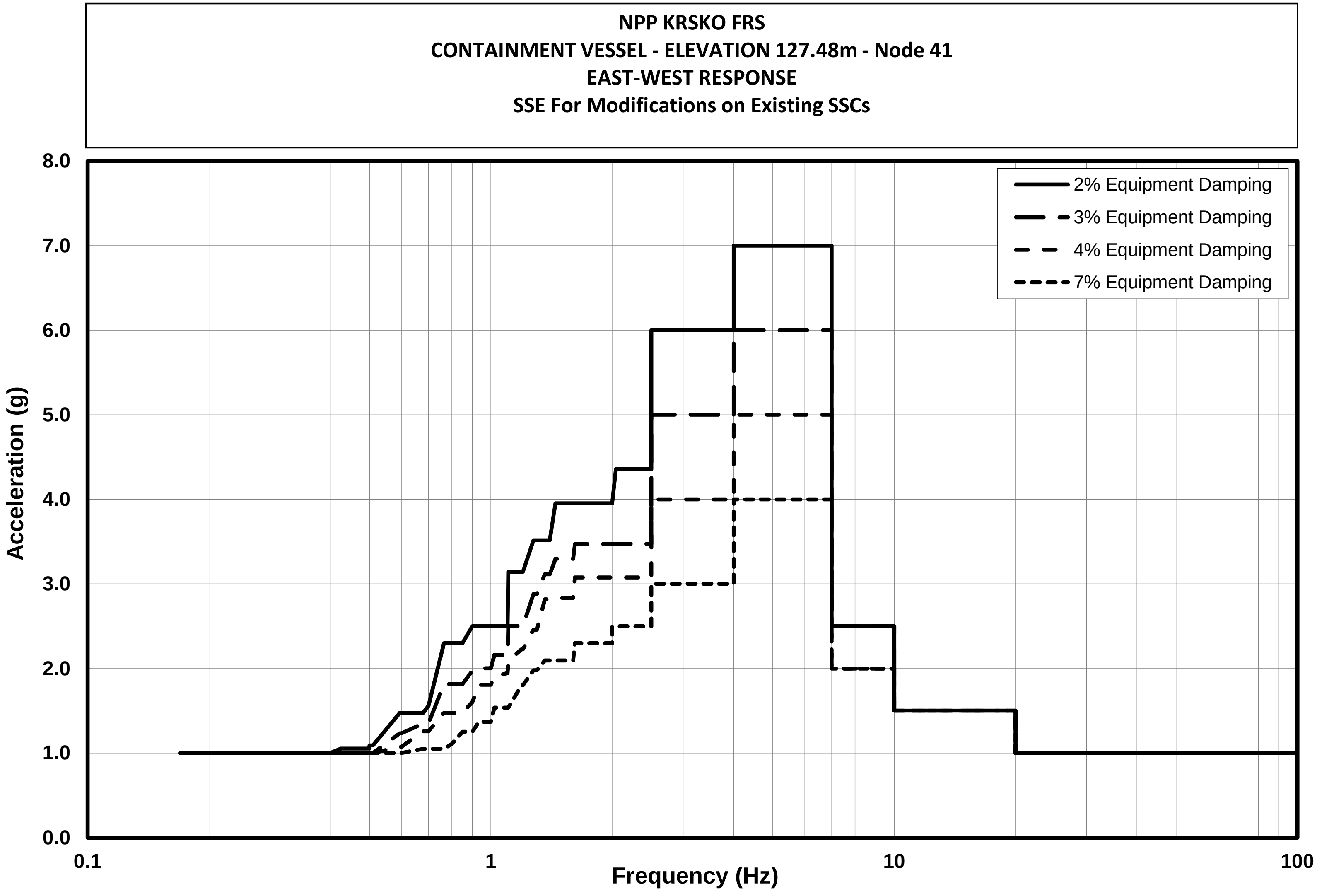
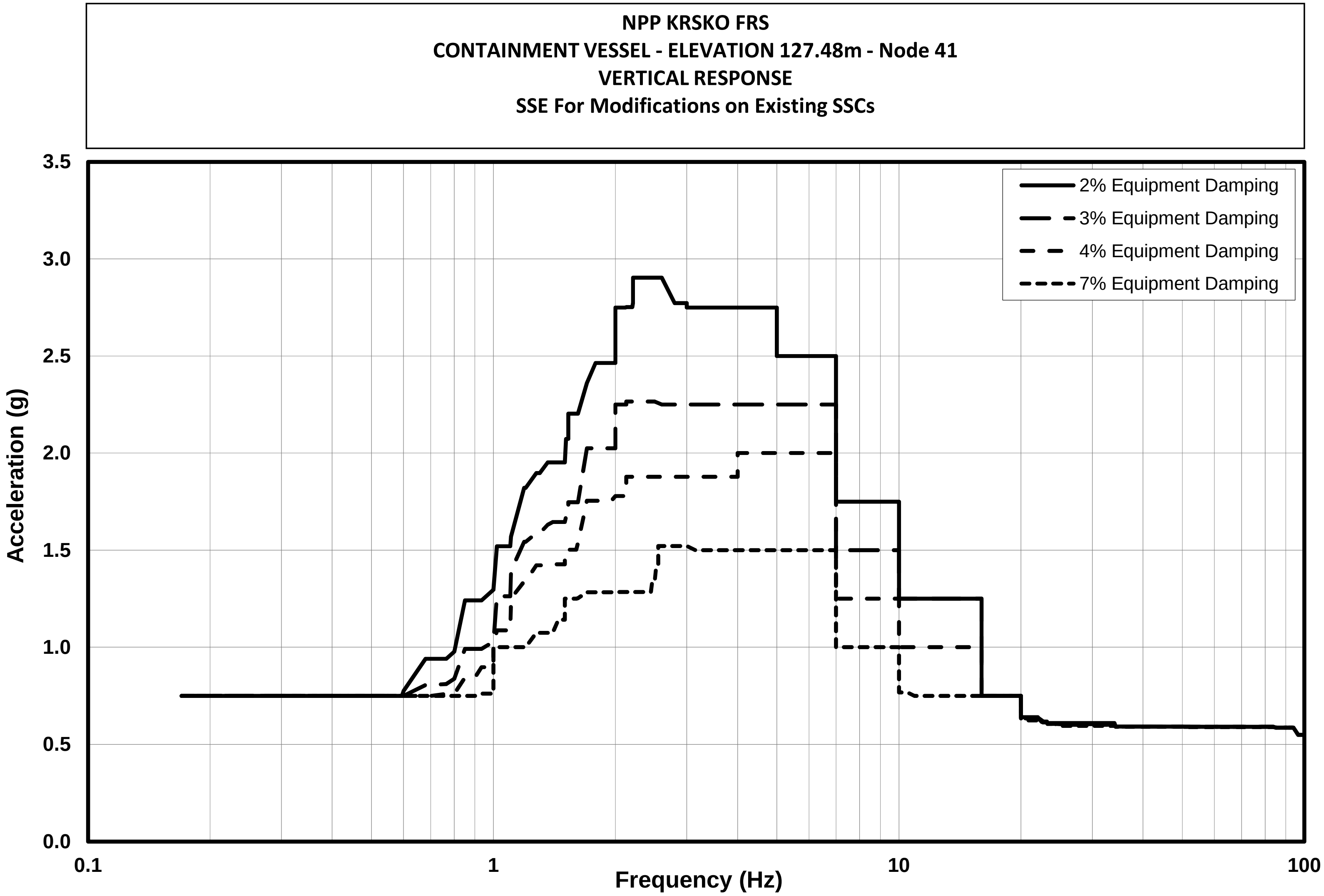


Figure B12


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 127.48m - Node 41
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 127.48m - Node 41
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 127.48m - Node 41
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

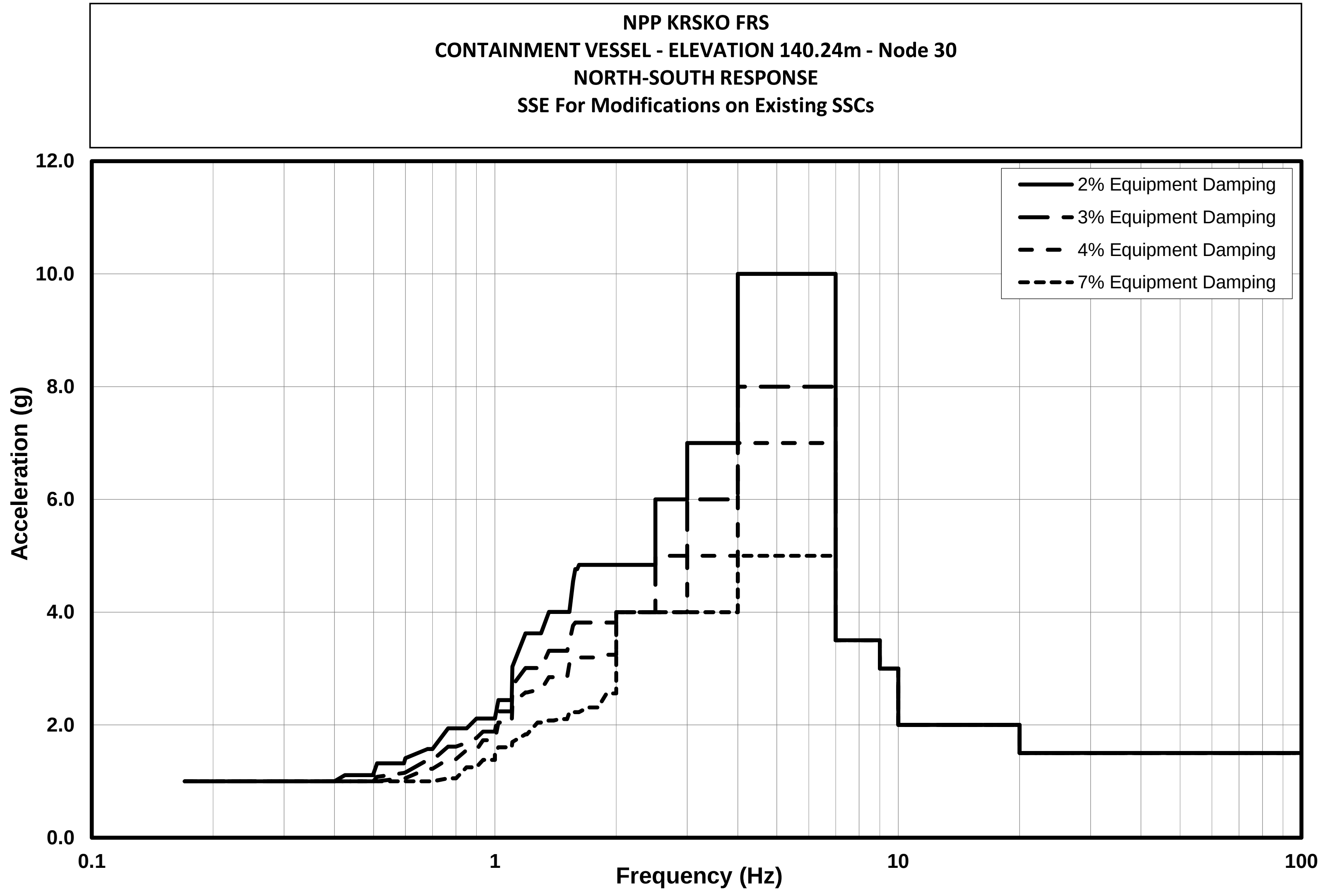
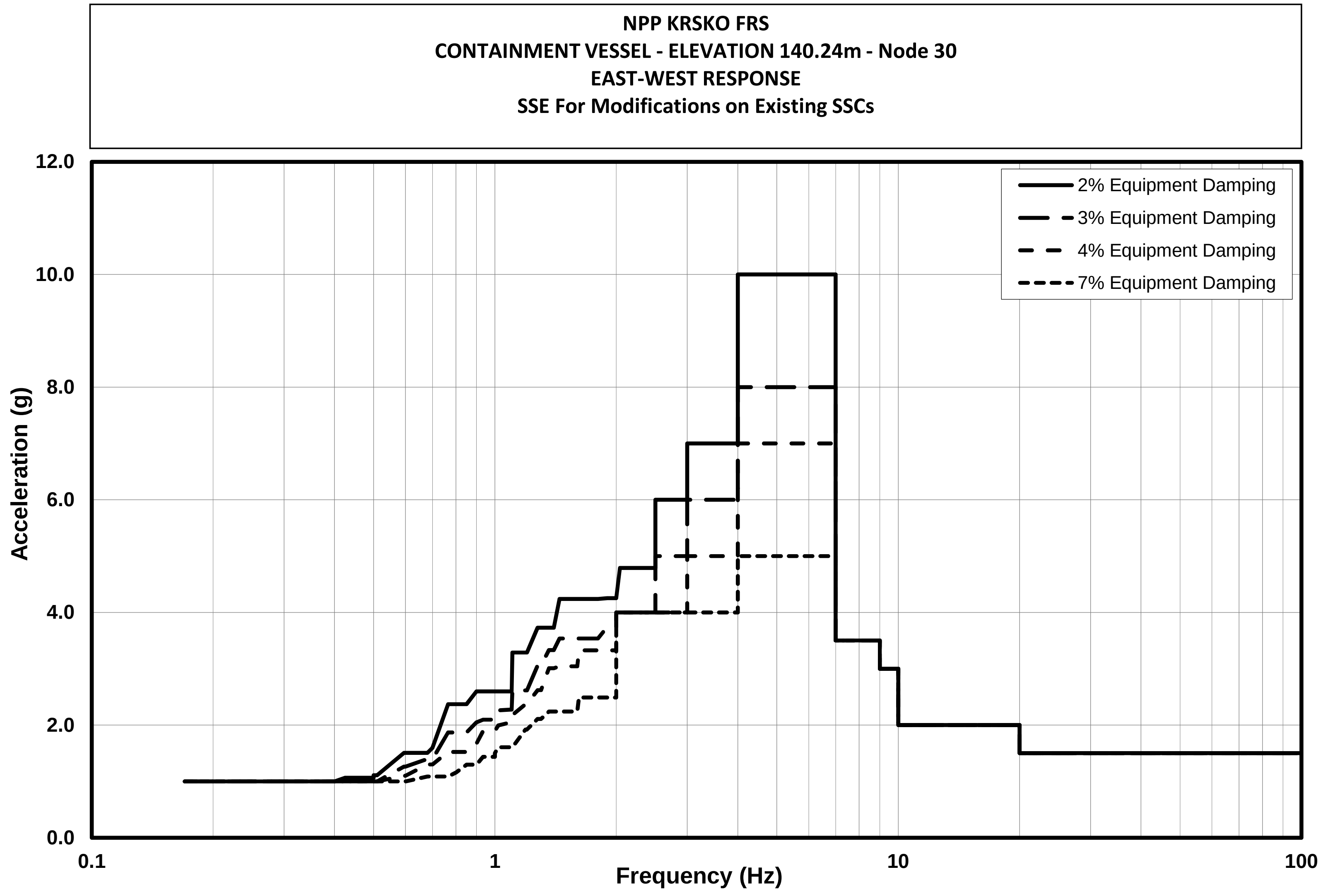
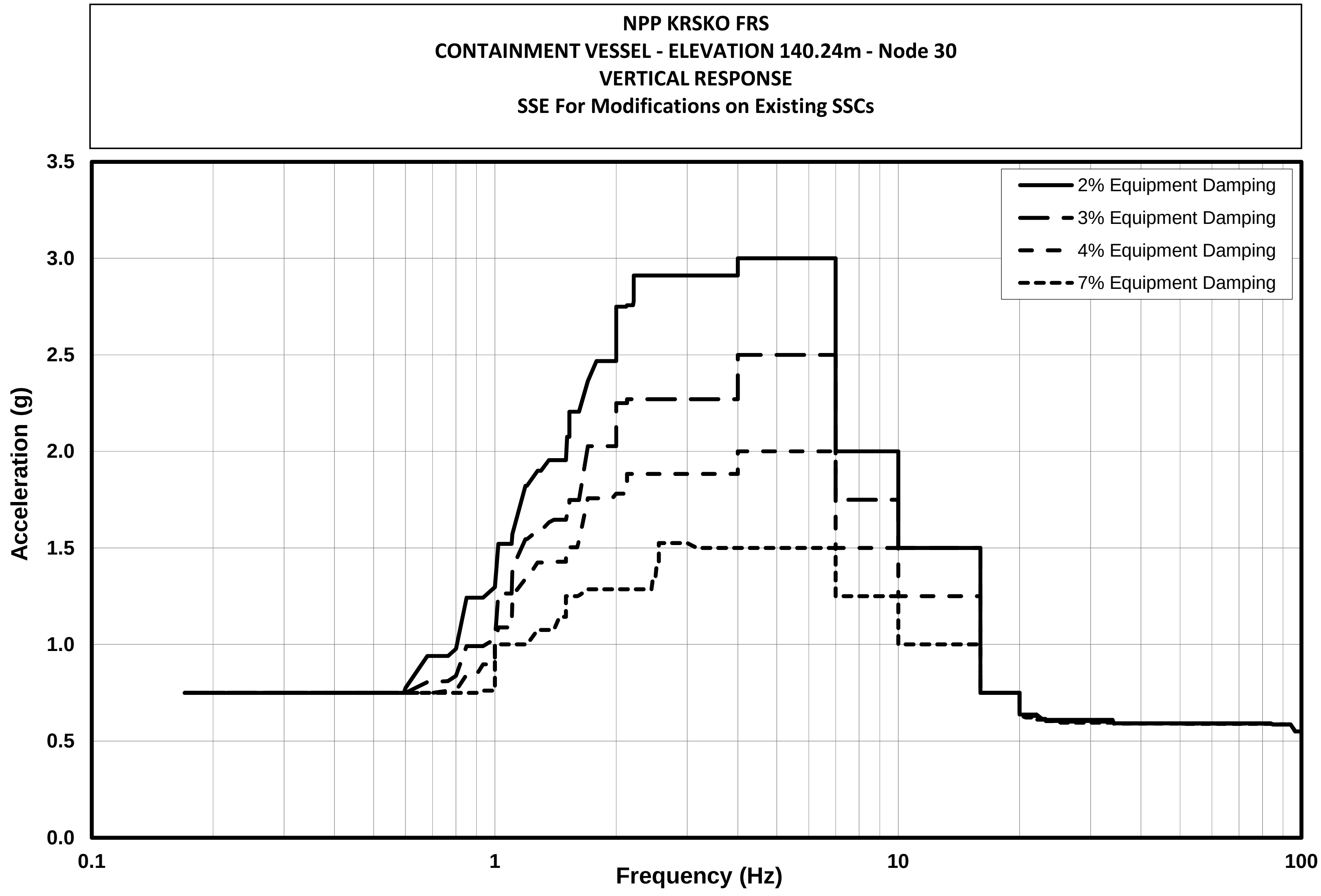
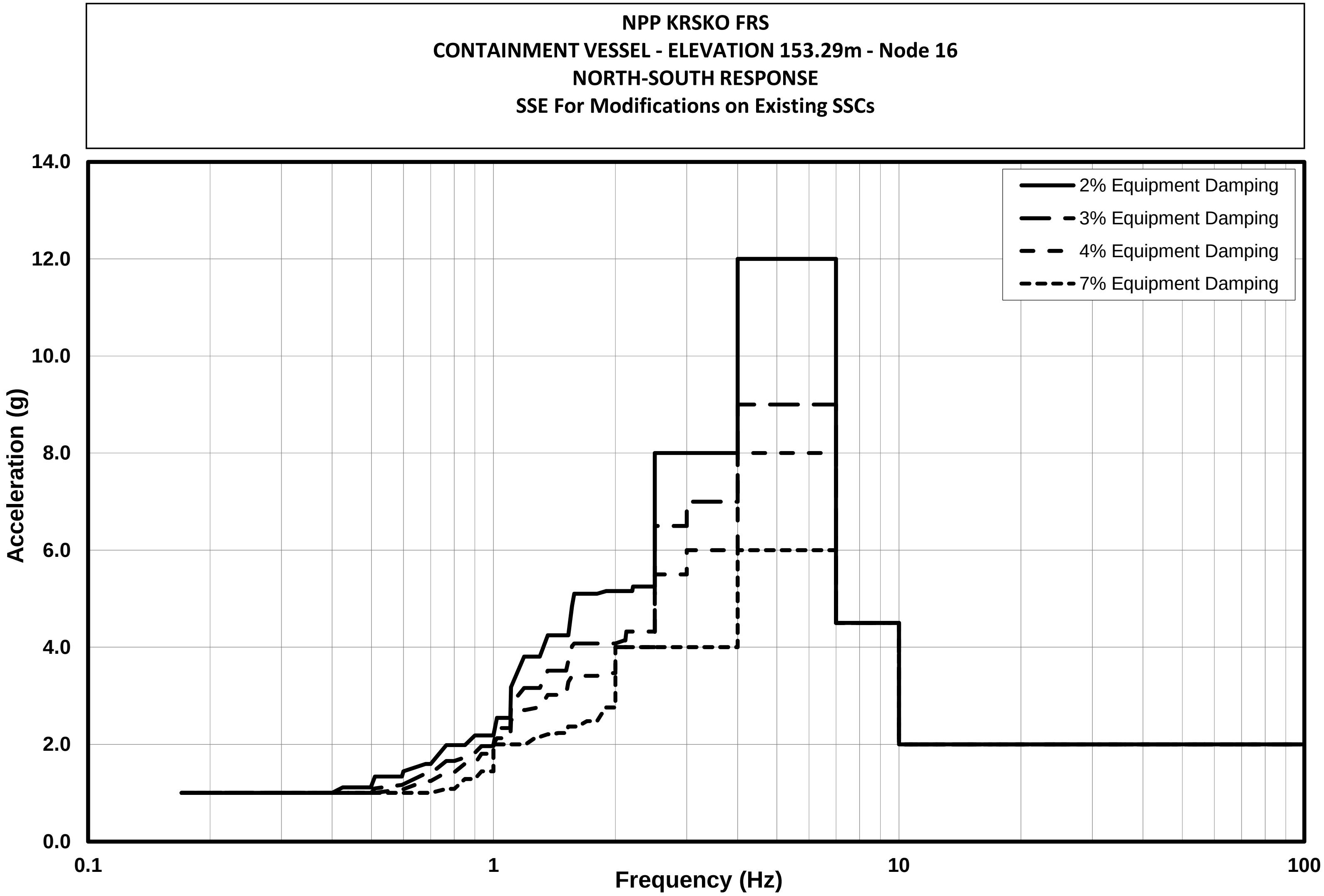
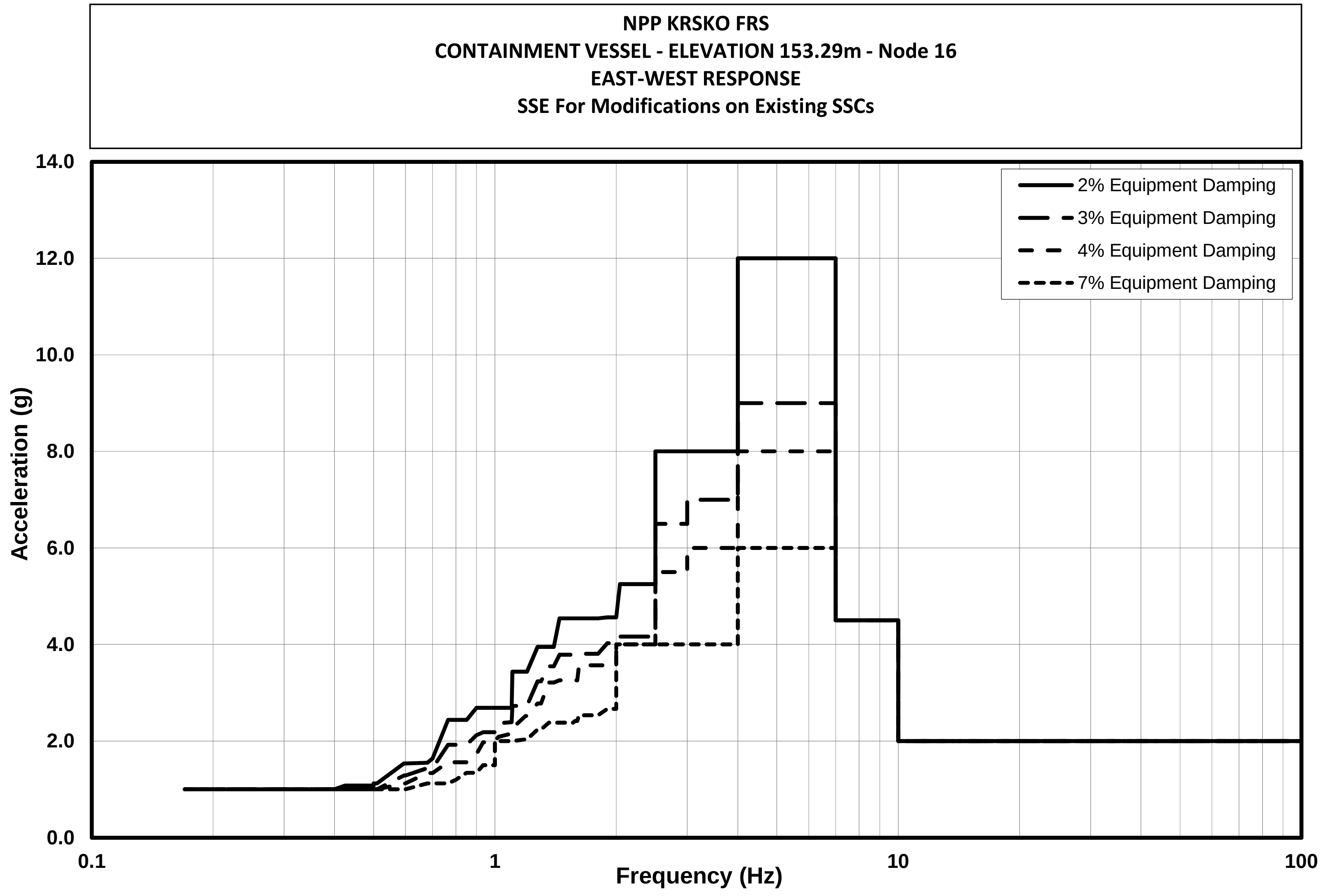

NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 140.24m - Node 30
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B16


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 140.24m - Node 30
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Acceleration (g)
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 140.24m - Node 30
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0.1
1
10
100


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 153.29m - Node 16
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
Frequency (Hz)
0.1
1
10
100


NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 153.29m - Node 16
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

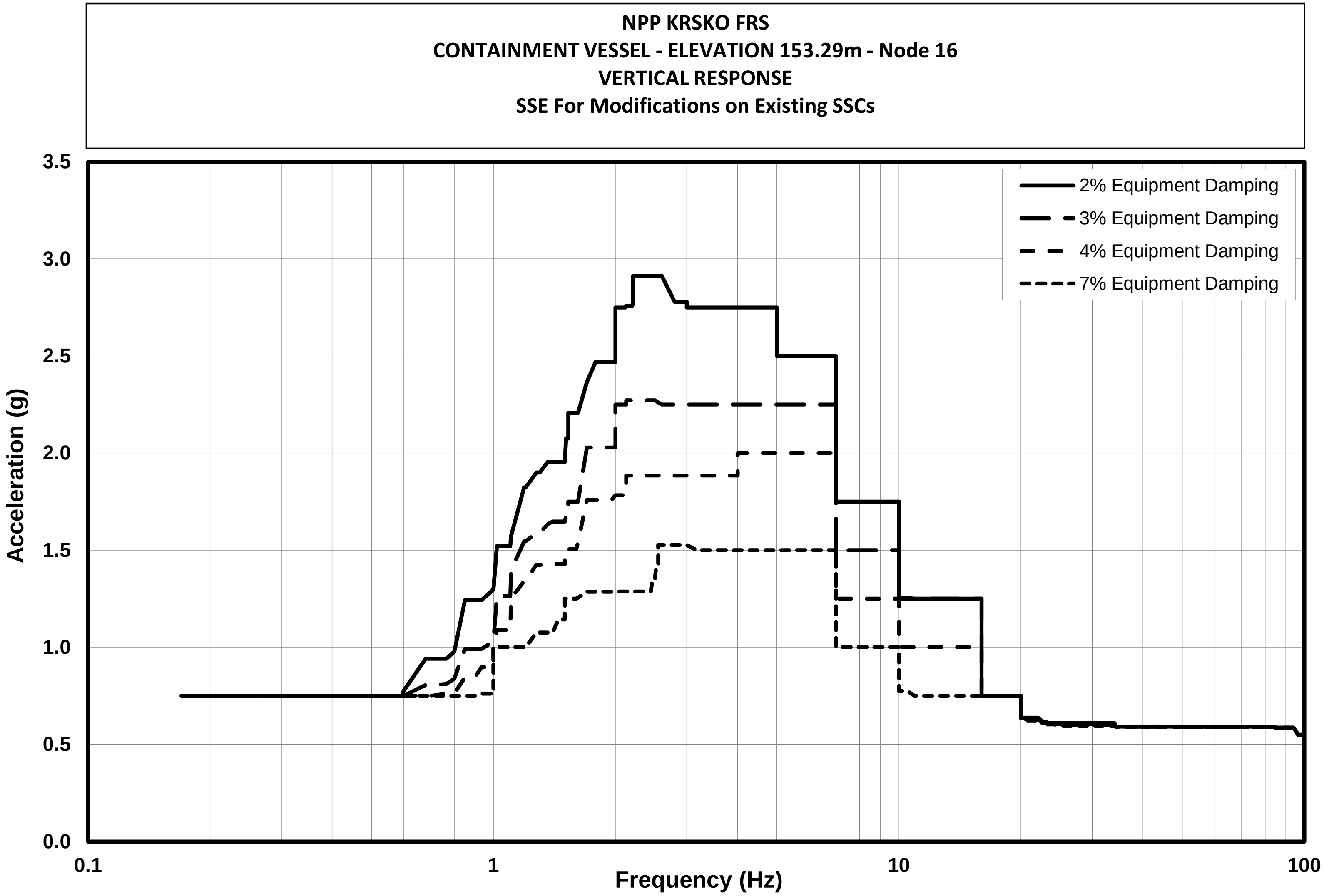
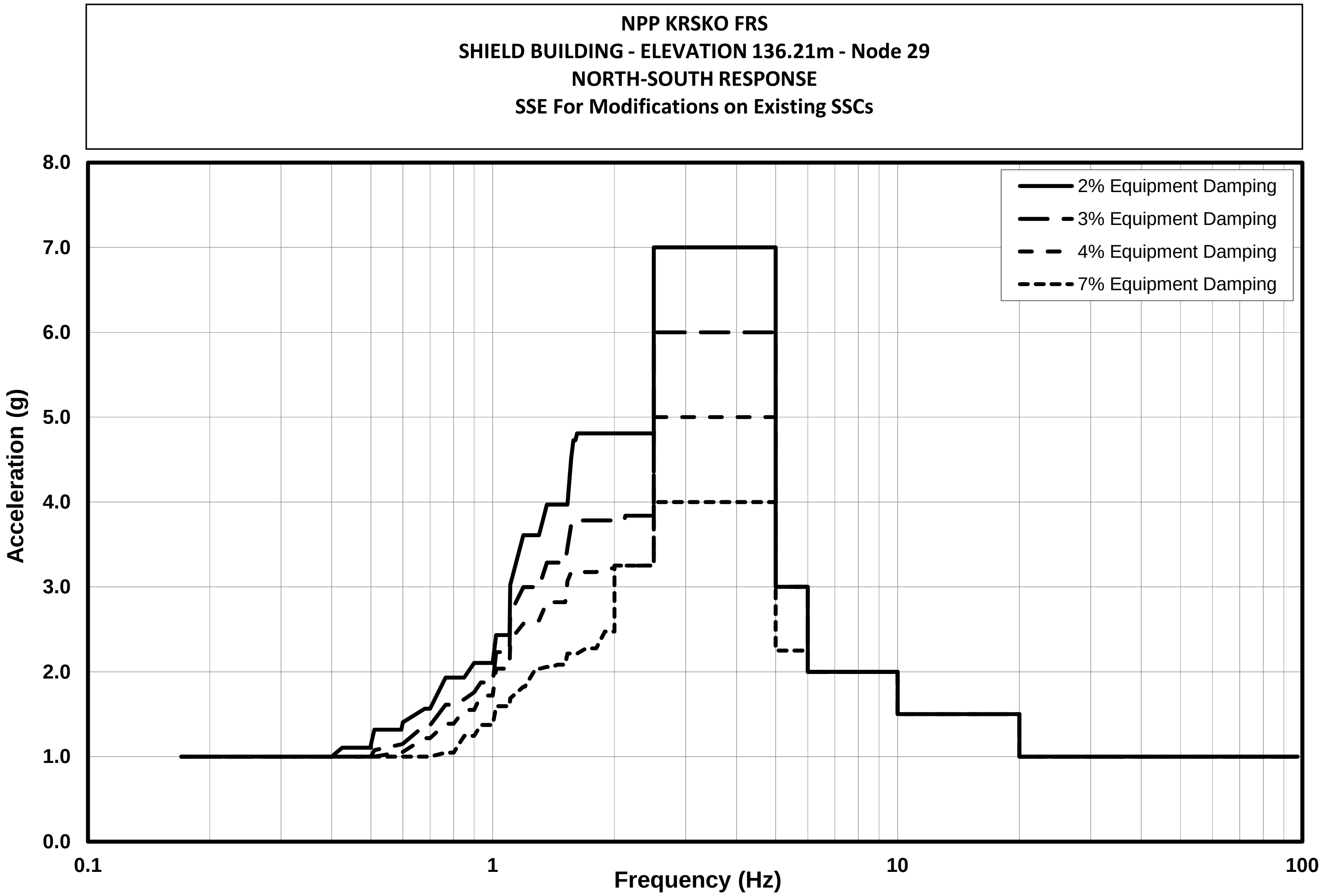
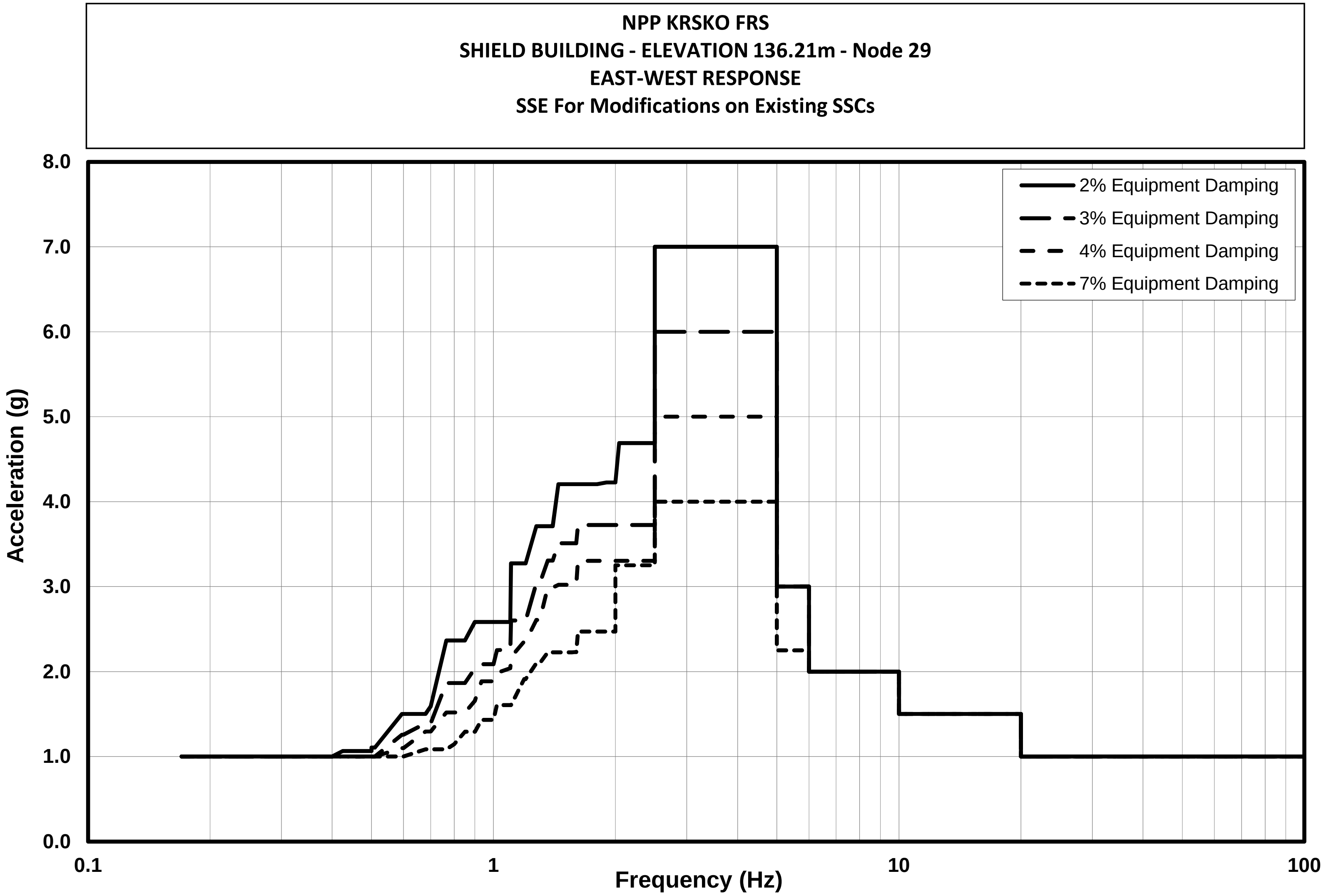

NPP KRSKO FRS
CONTAINMENT VESSEL - ELEVATION 153.29m - Node 16
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0.1
1
10
100

Figure B21


NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 136.21m - Node 29
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100



NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 136.21m - Node 29
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 136.21m - Node 29
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs

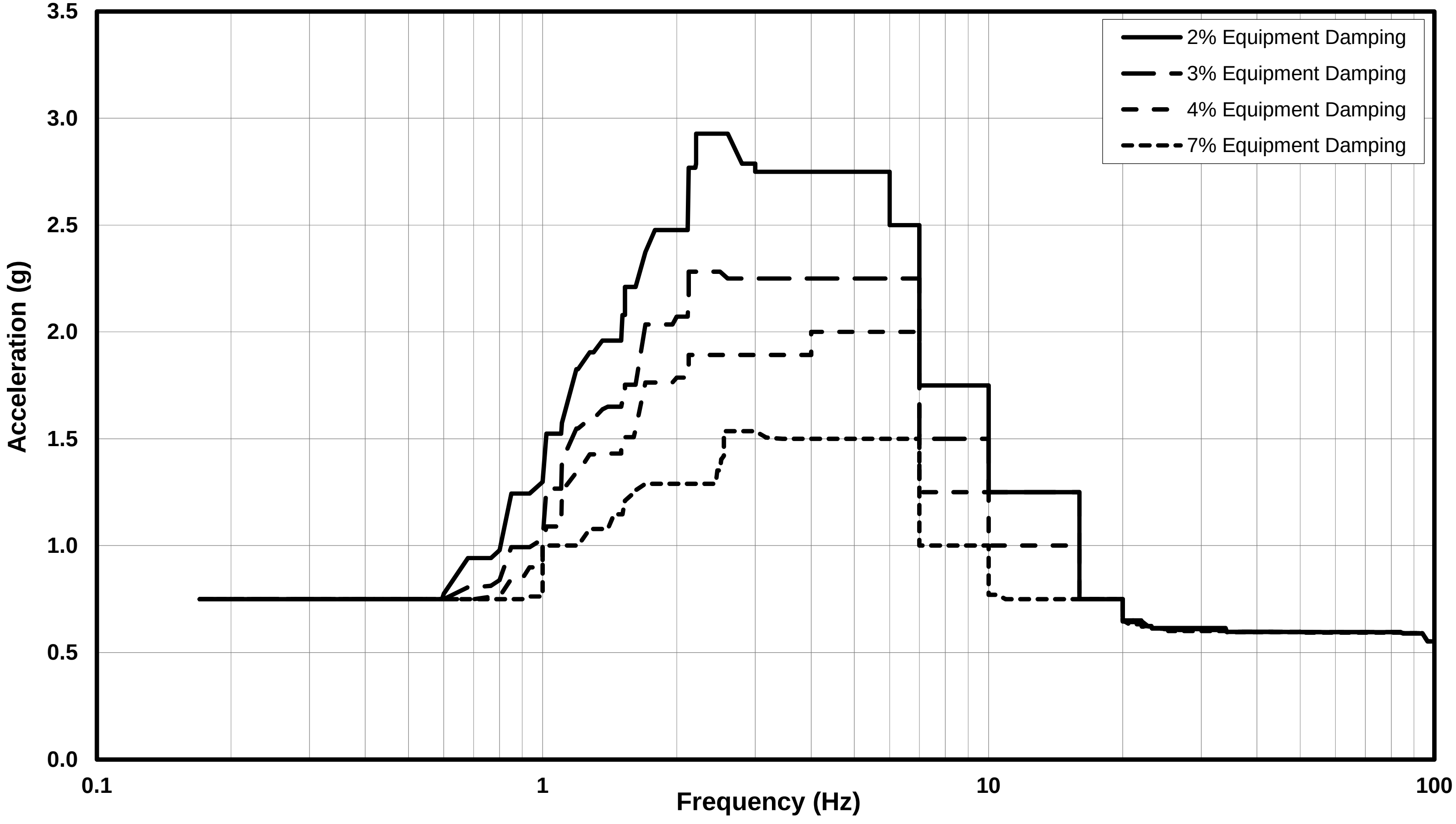
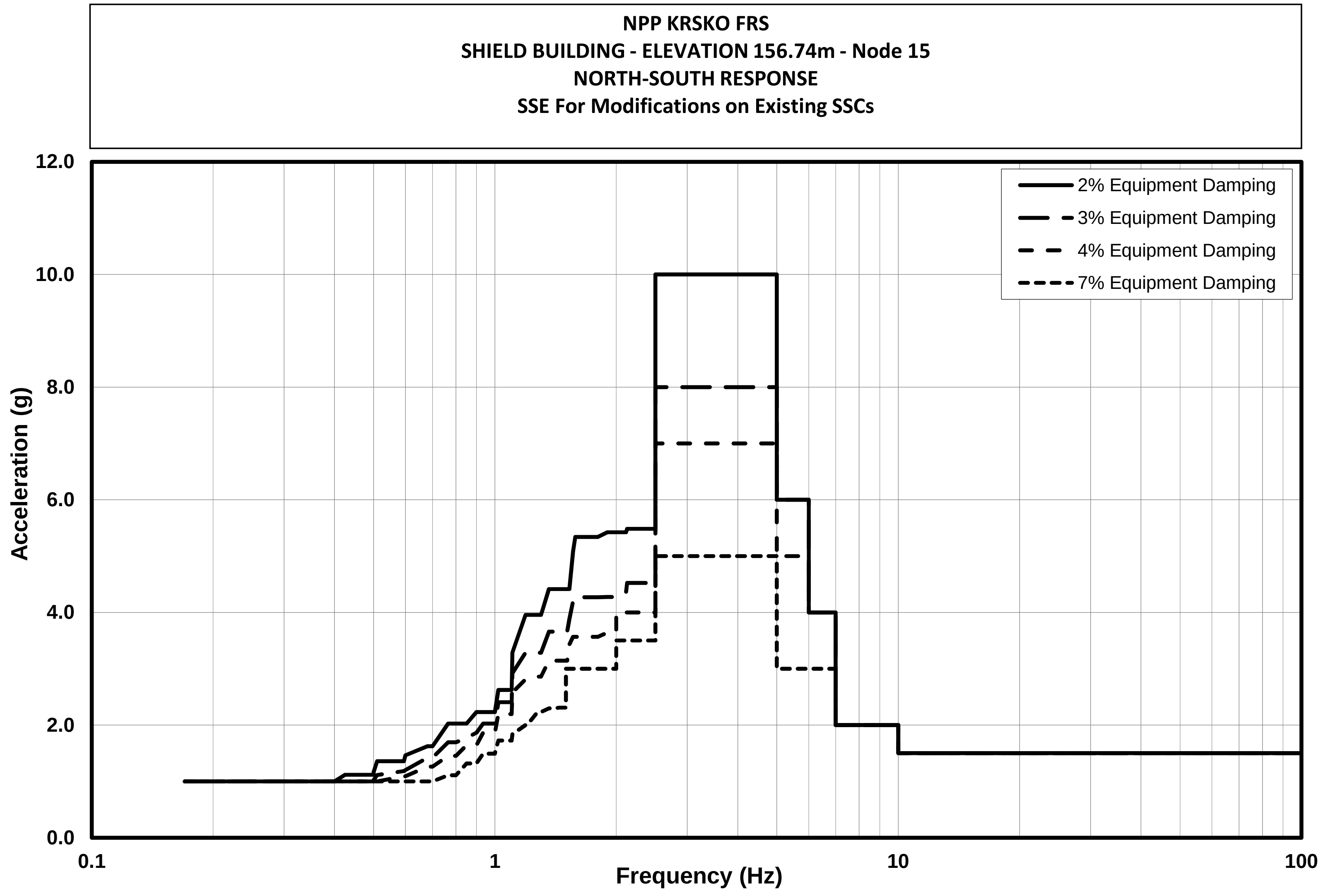
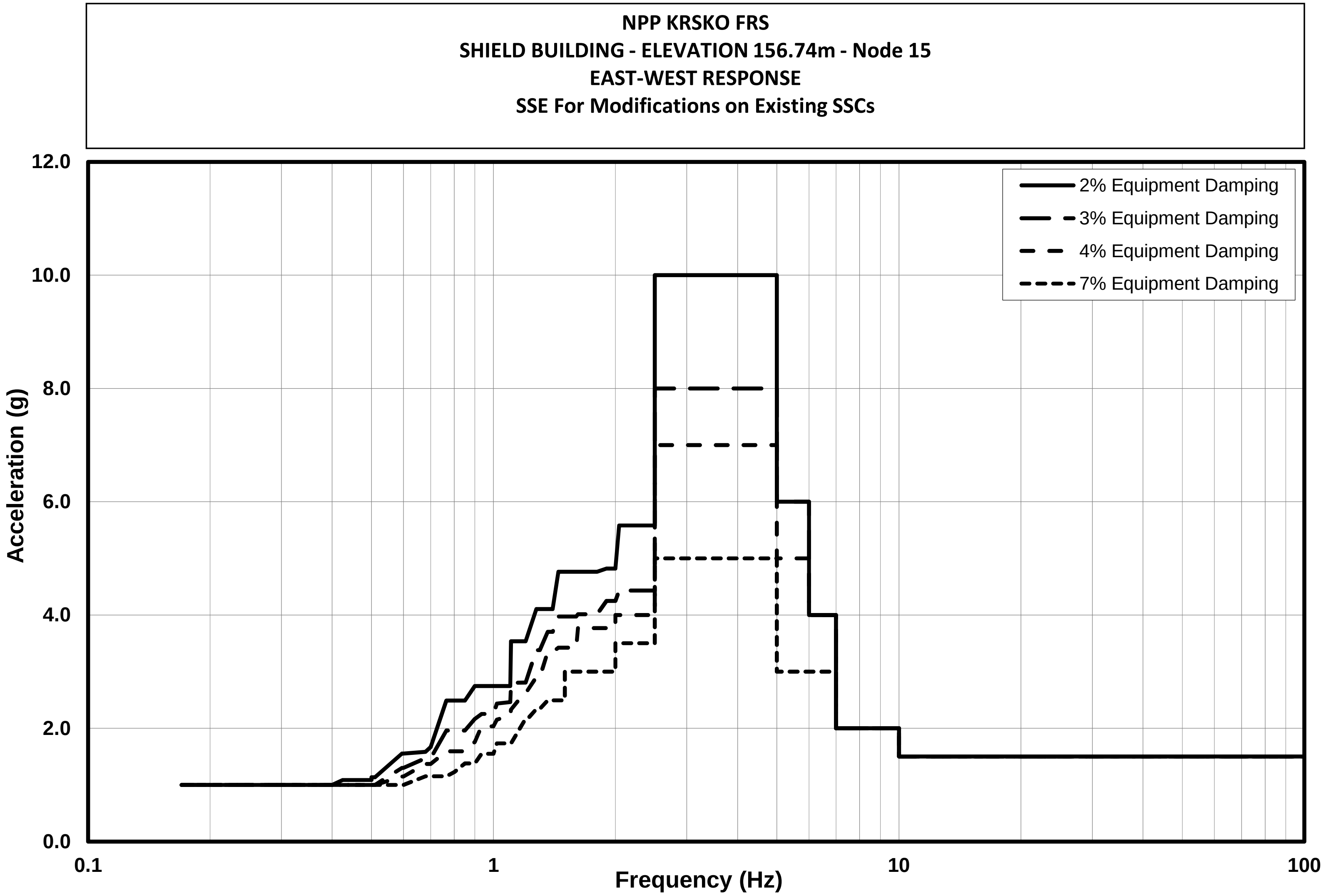
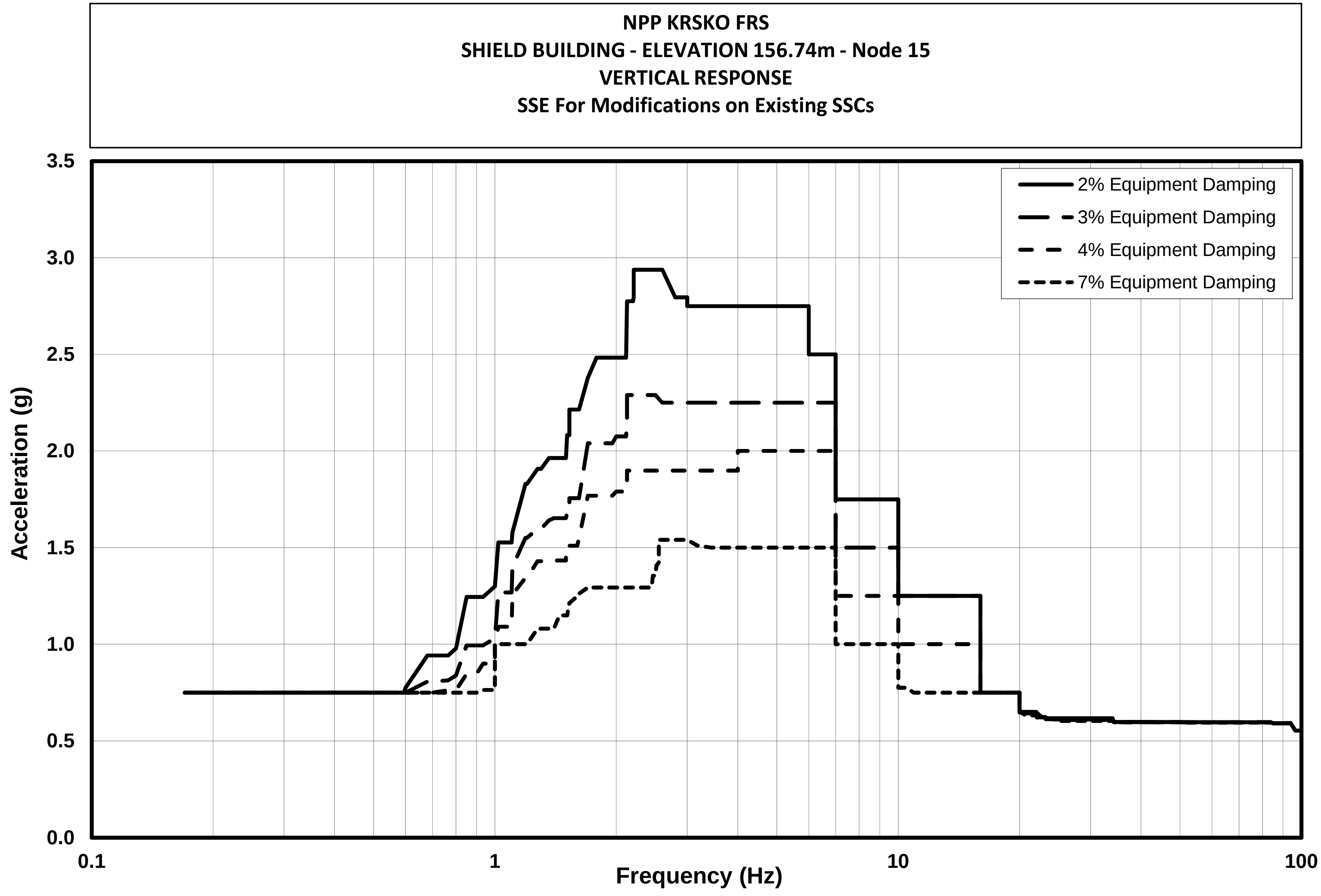
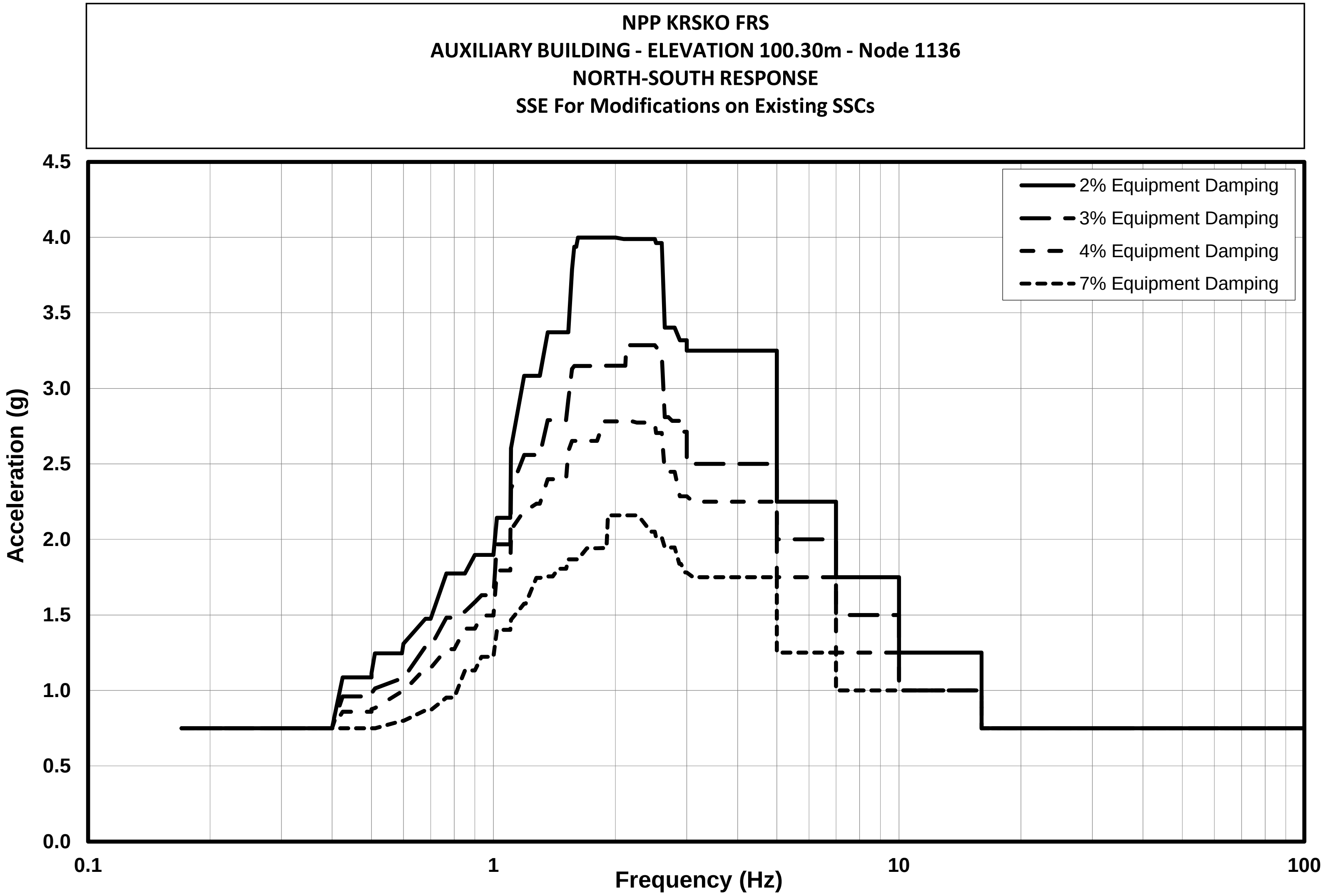


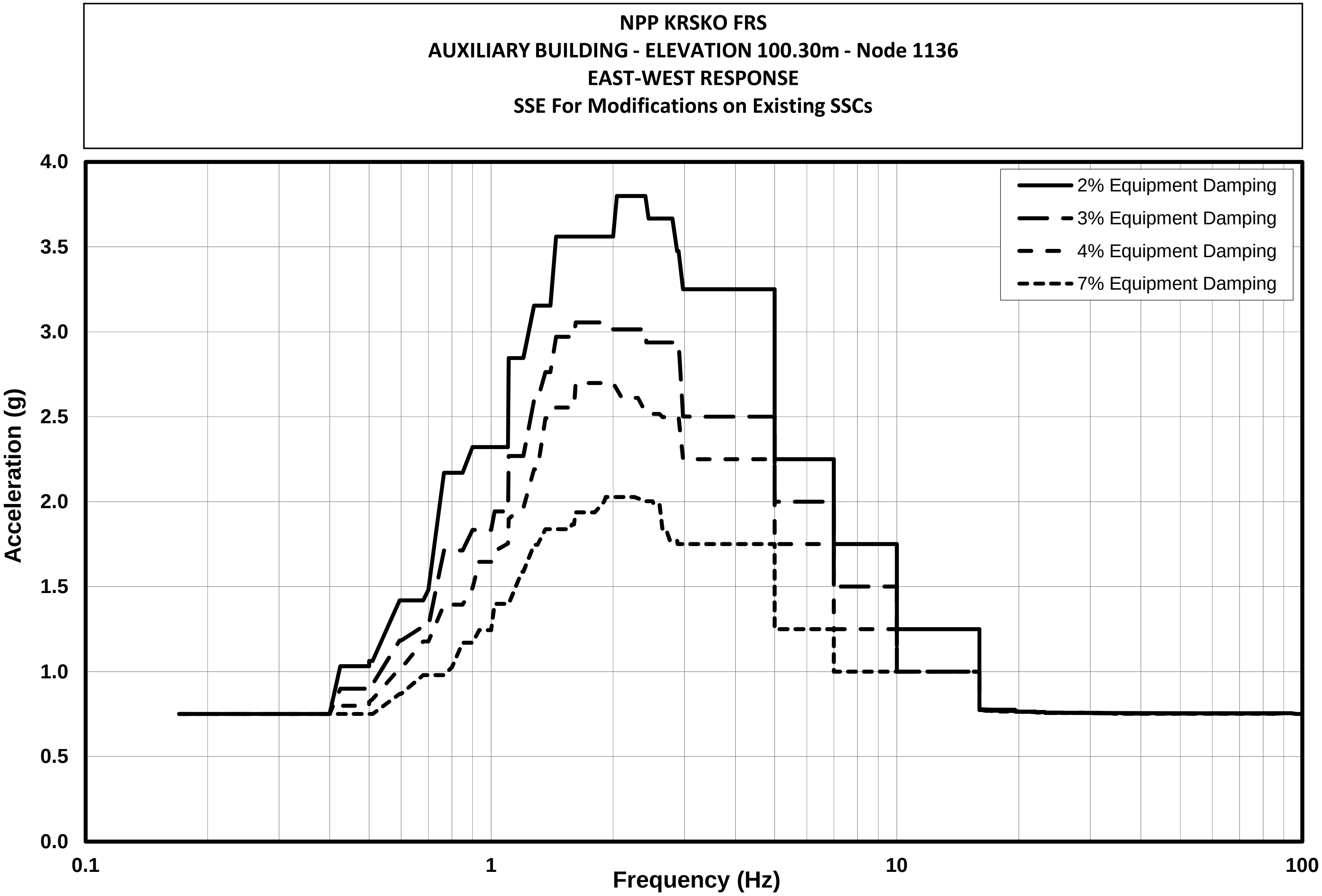
Figure B24

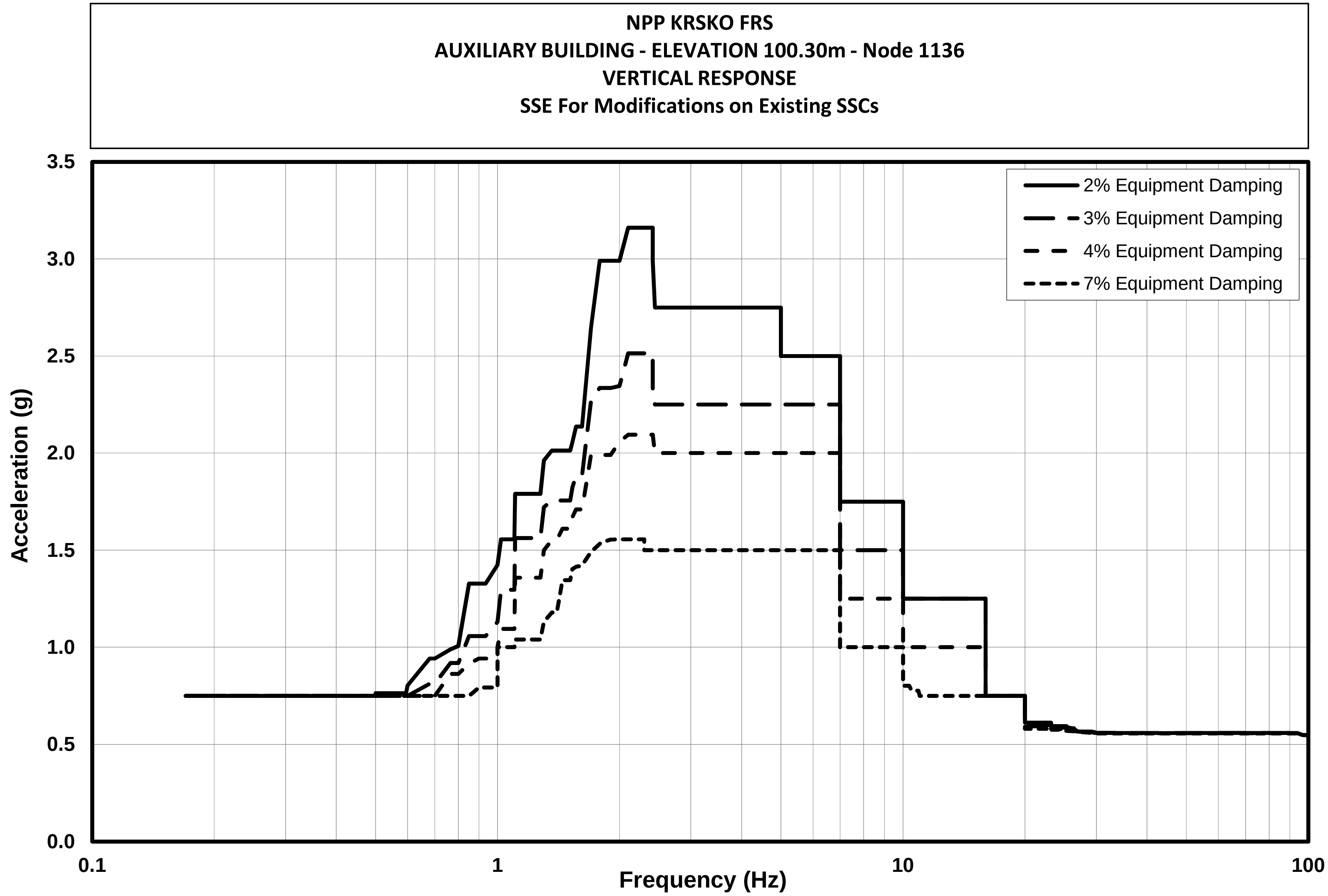

NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 156.74m - Node 15
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
0.1
1
10
100

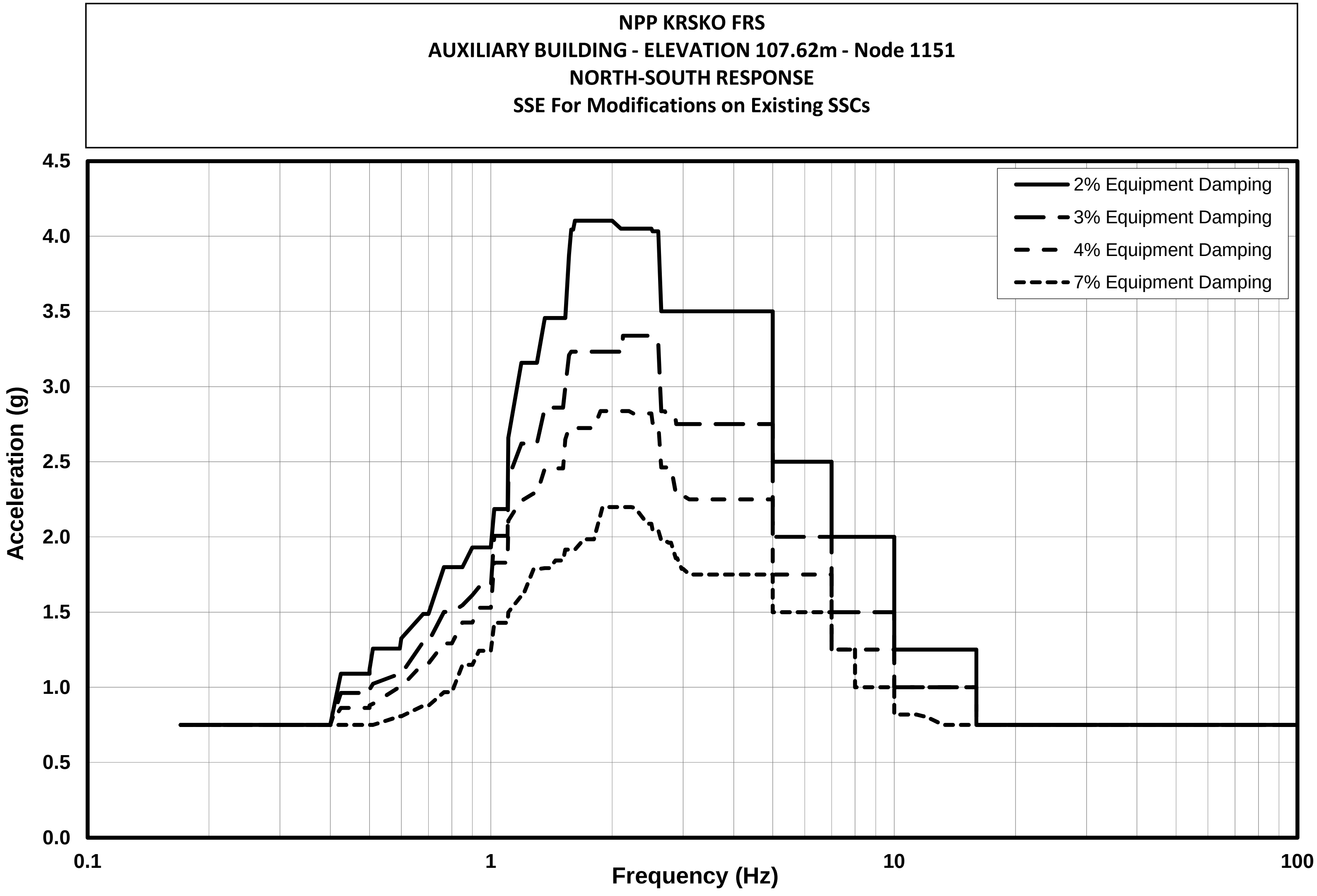

NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 156.74m - Node 15
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)


NPP KRSKO FRS
SHIELD BUILDING - ELEVATION 156.74m - Node 15
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 100.30m - Node 1136
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 100.30m - Node 1136
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Frequency (Hz)
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 100.30m - Node 1136
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 107.62m - Node 1151
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

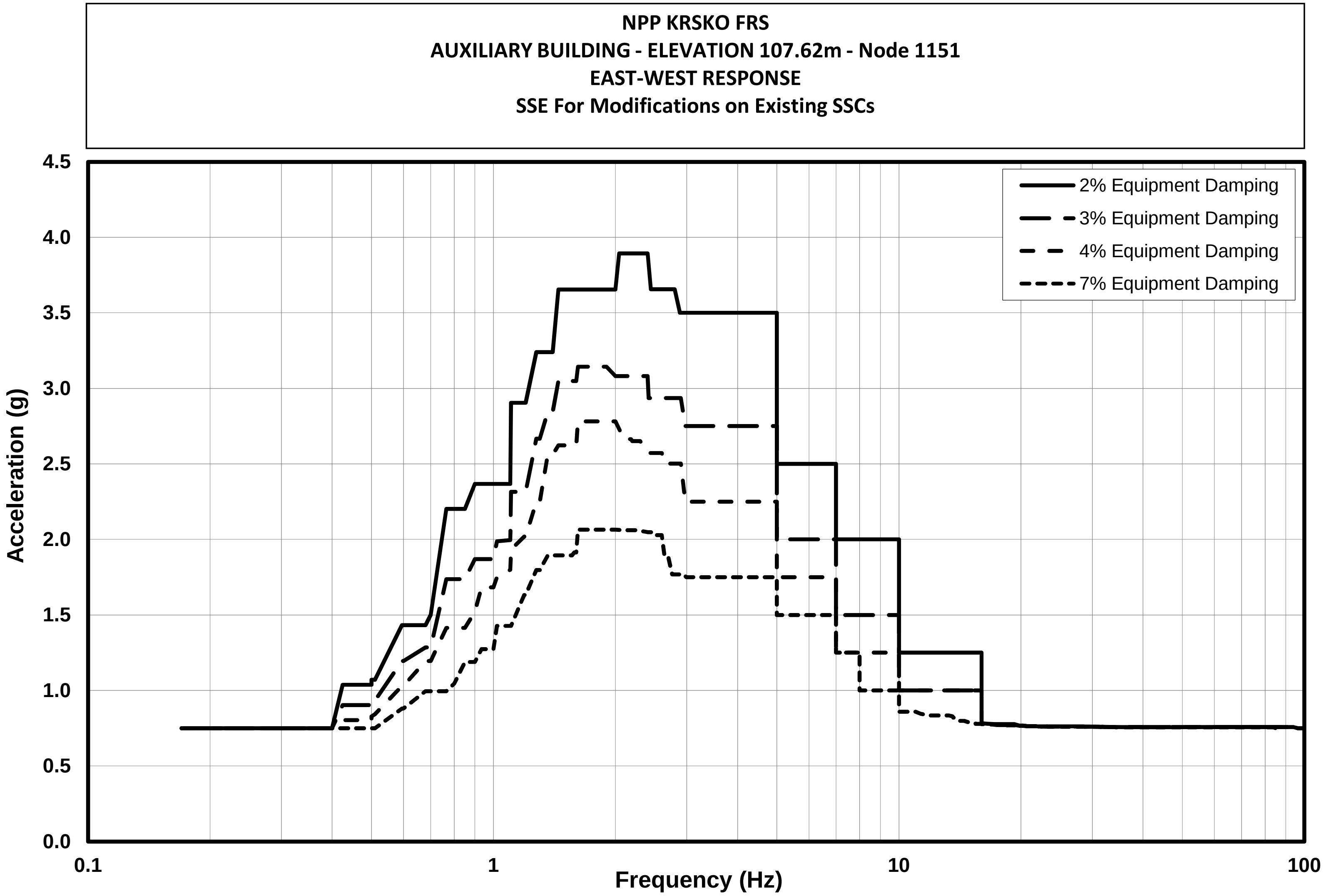
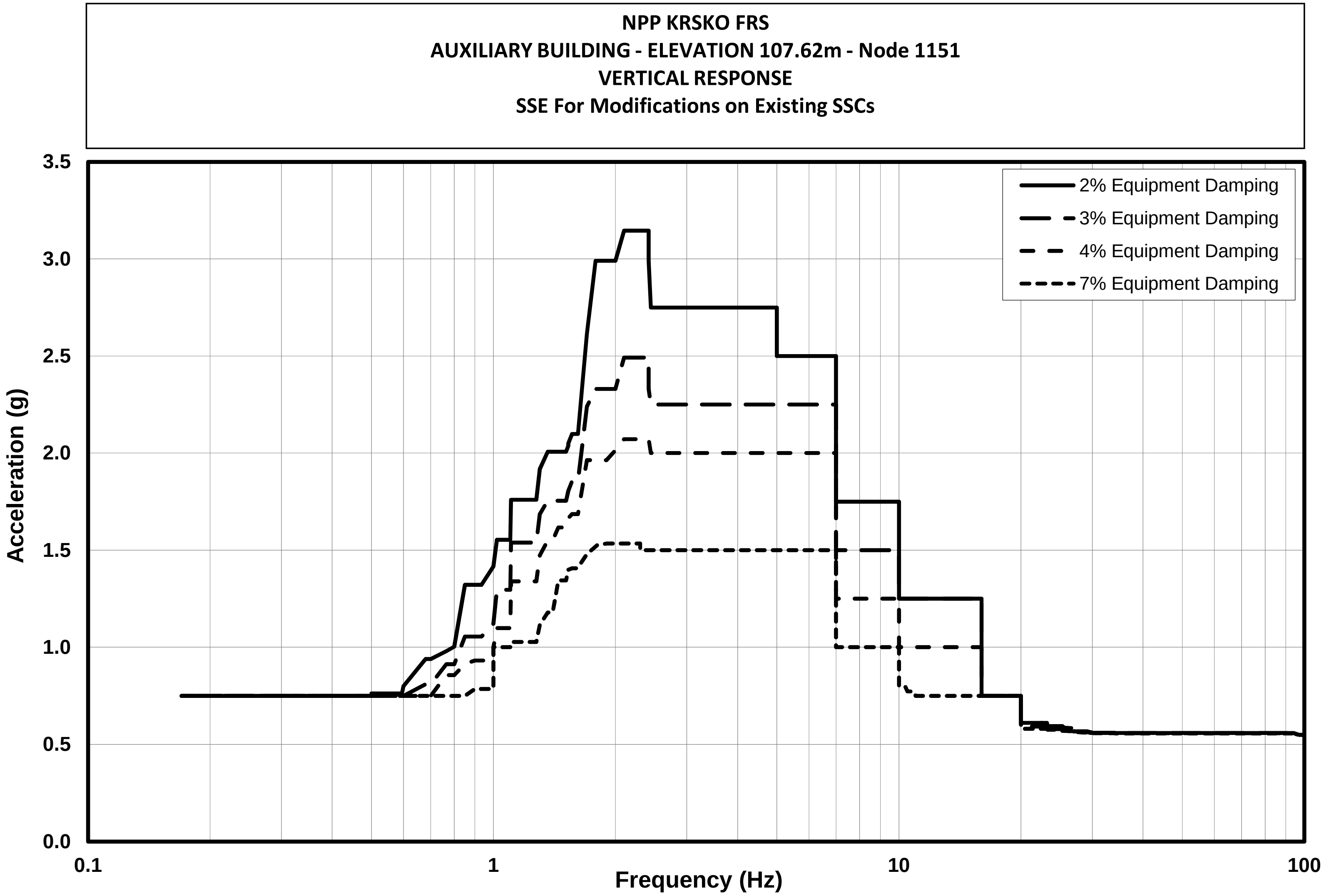

NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 107.62m - Node 1151
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B32


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 107.62m - Node 1151
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0.1
1
10
100

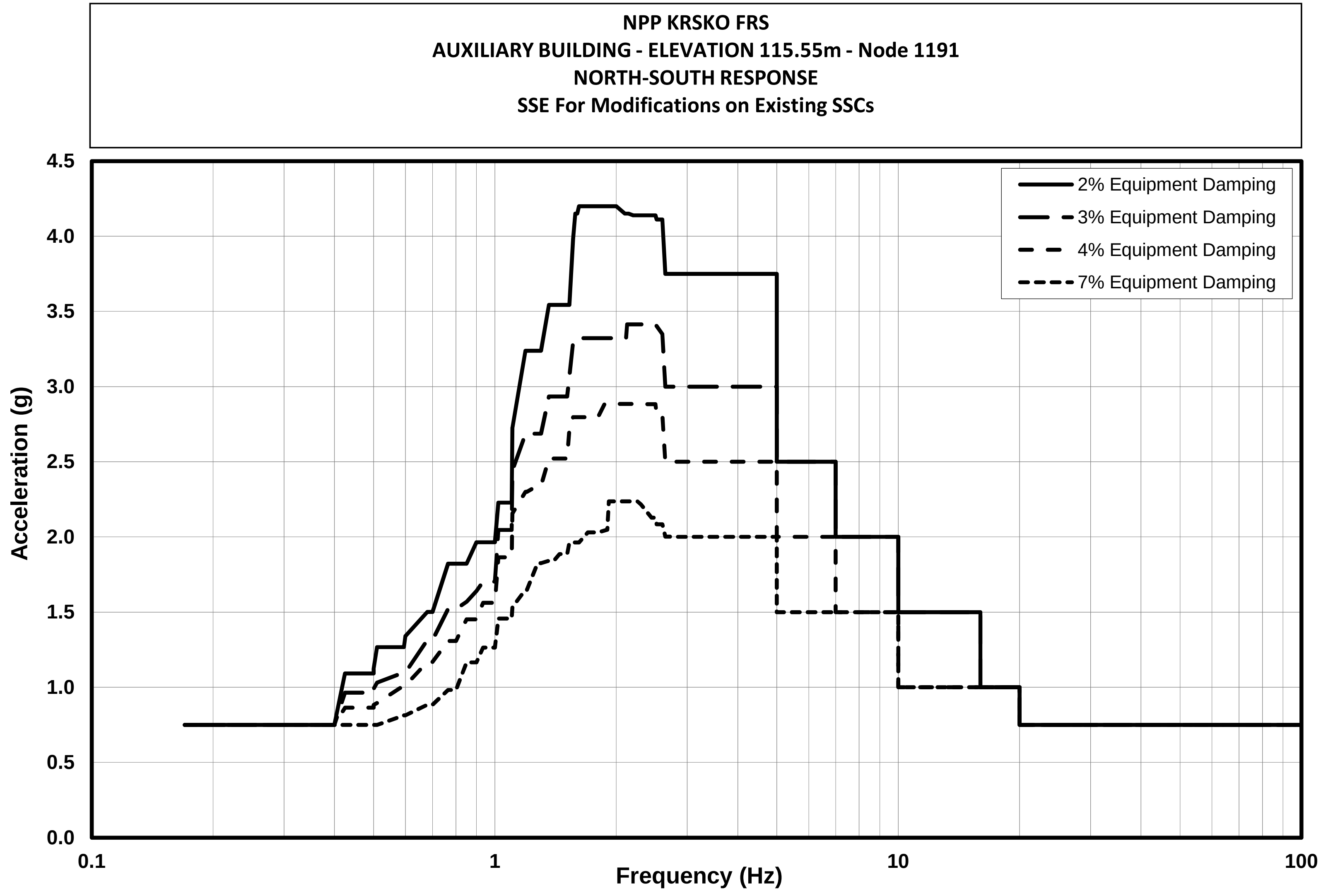
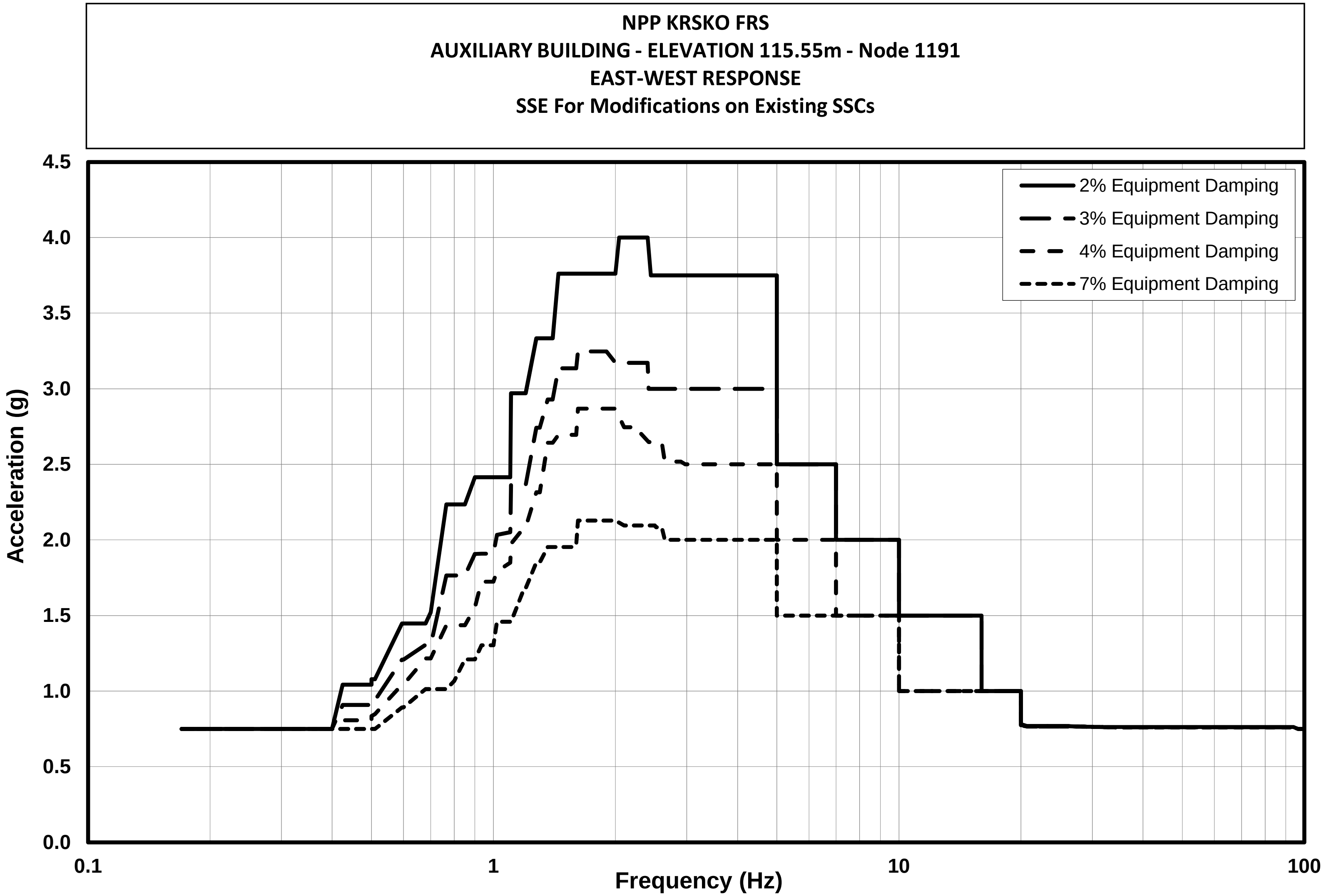
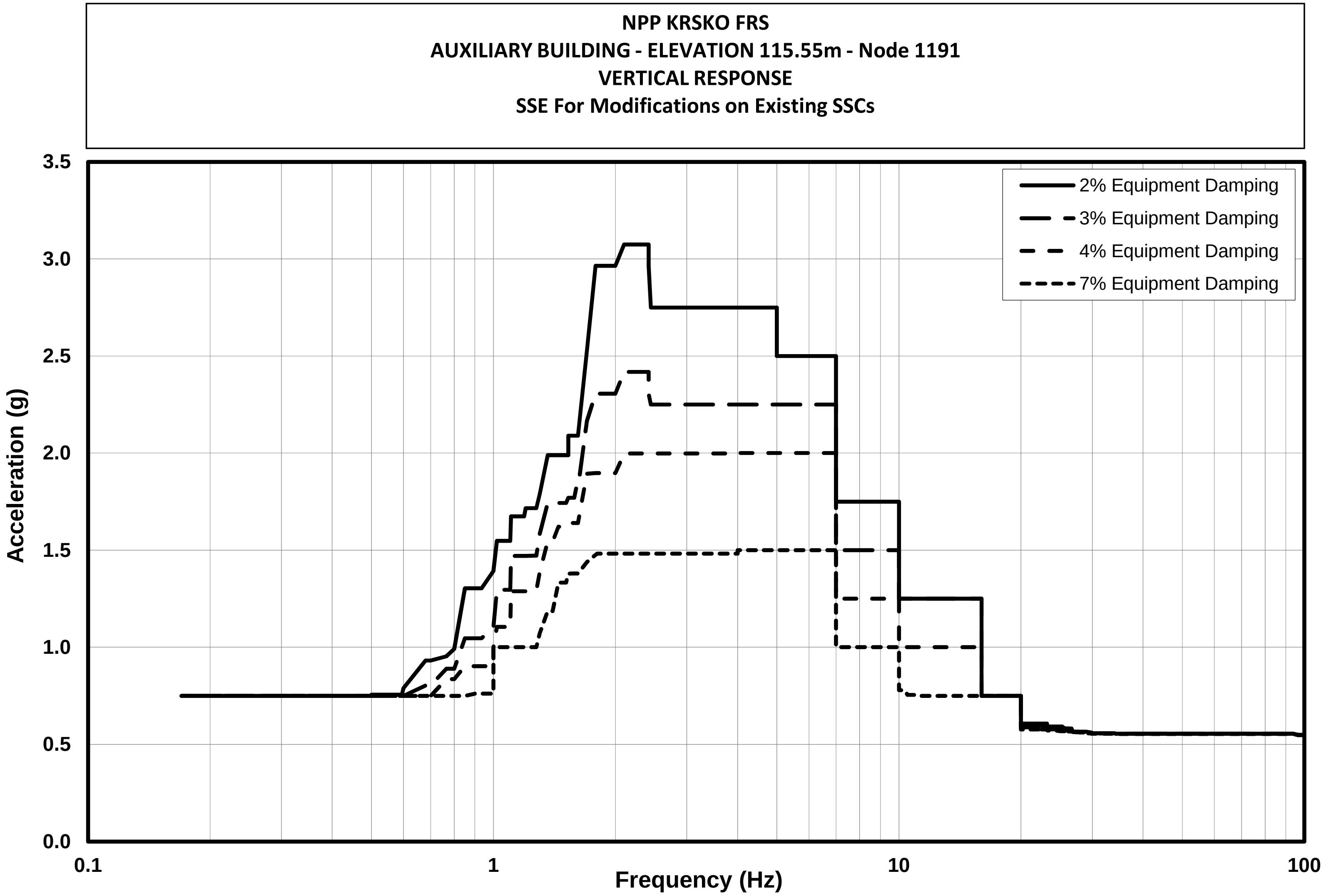

NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 115.55m - Node 1191
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

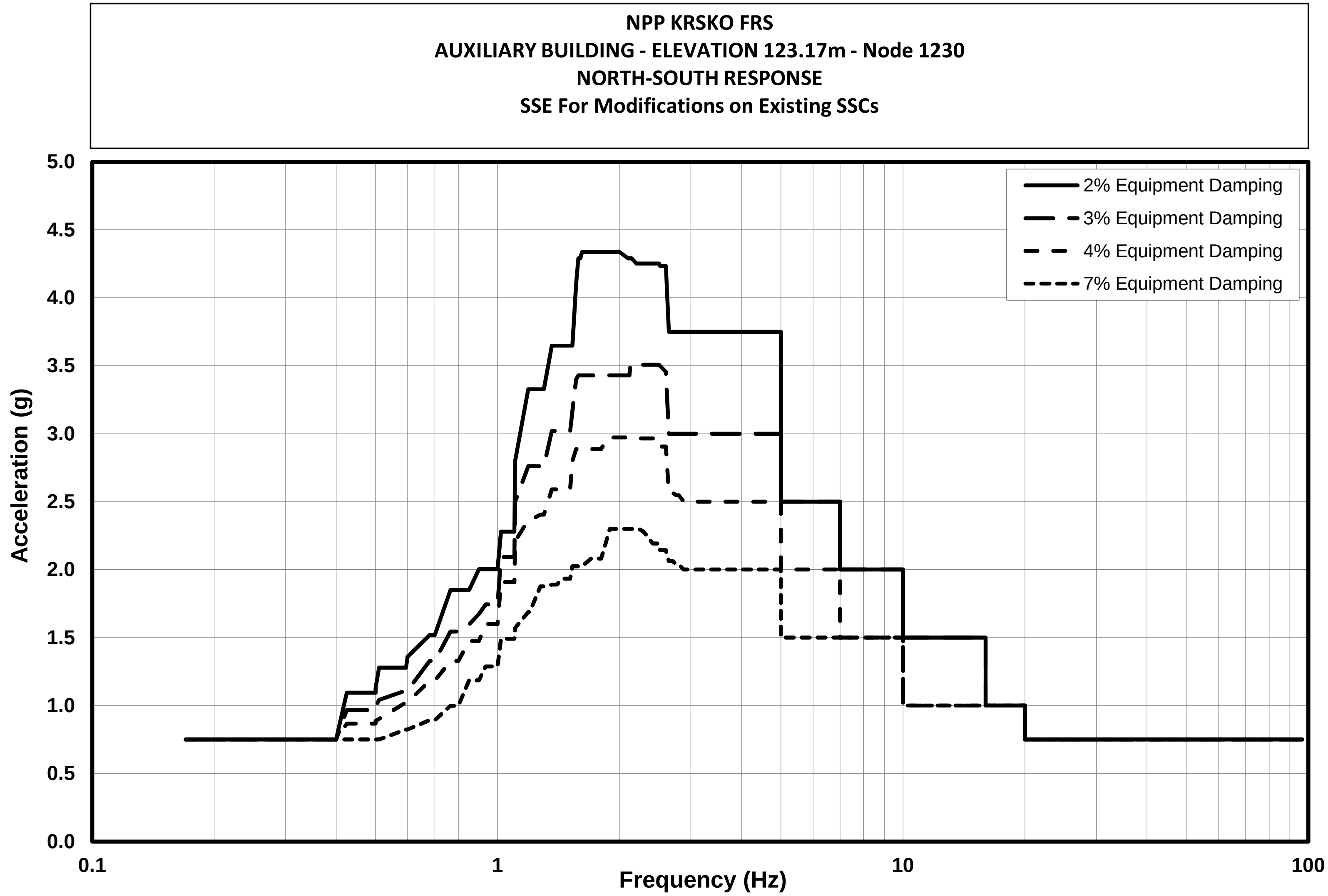
Figure B34

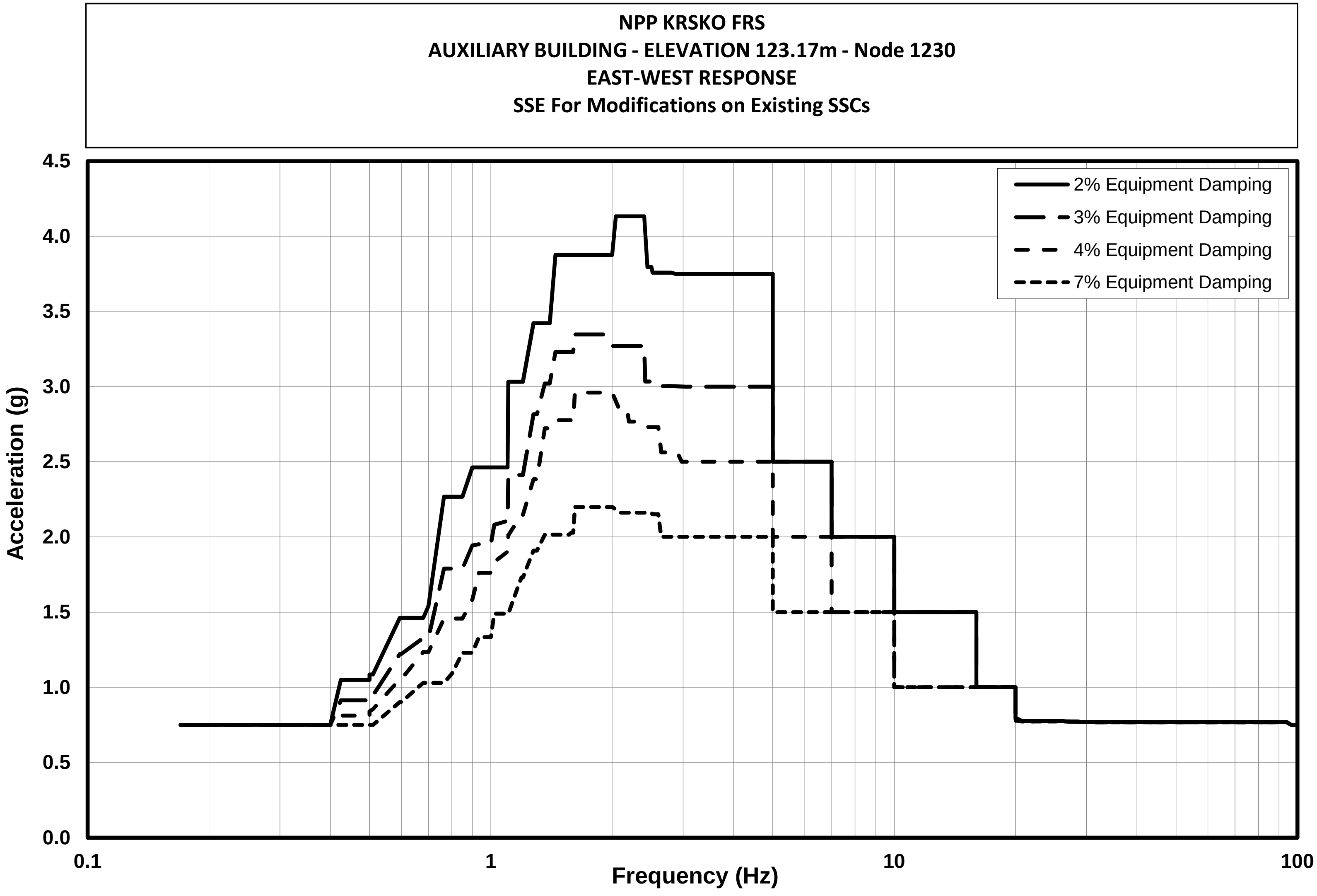

NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 115.55m - Node 1191
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

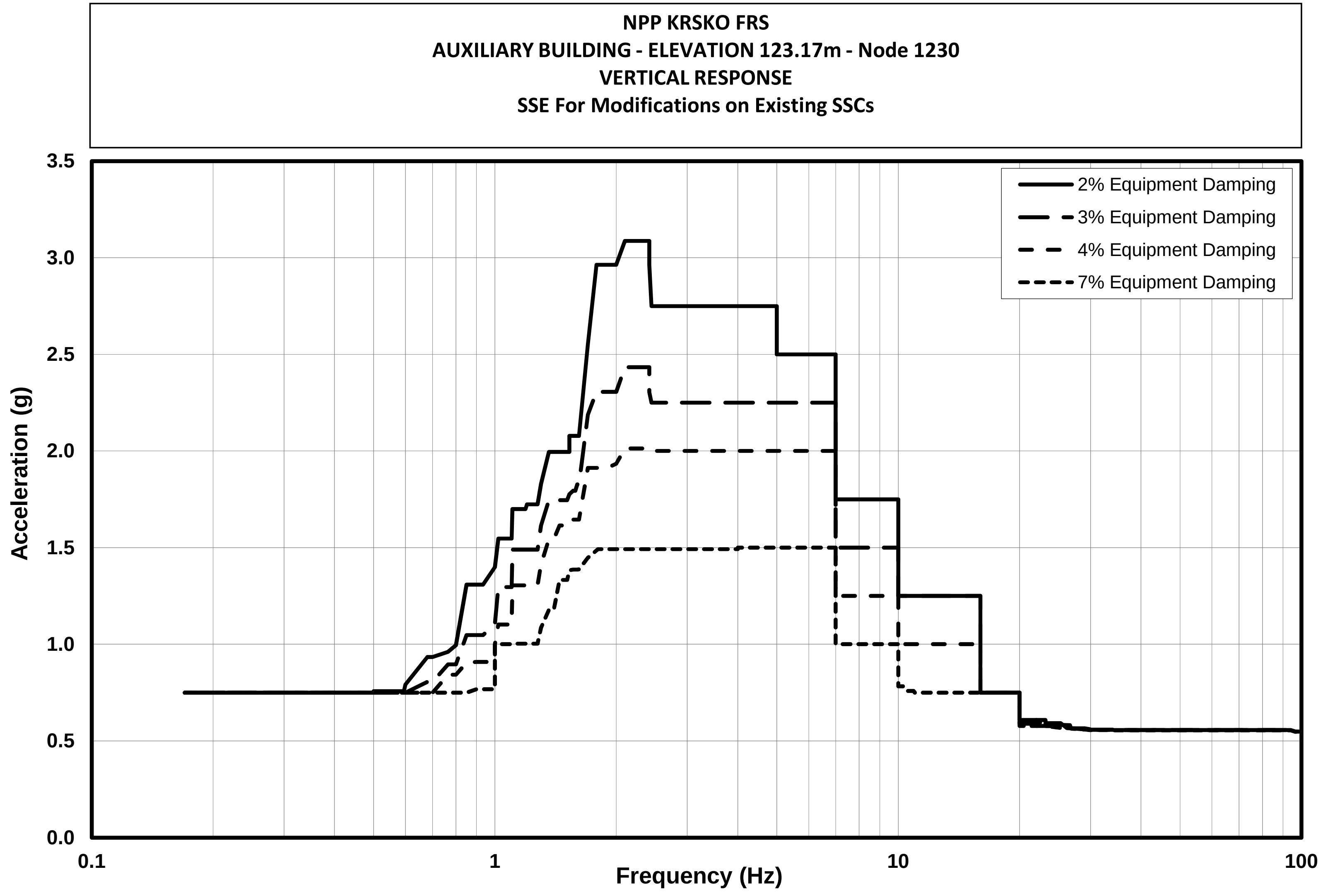


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 115.55m - Node 1191
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B36


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 123.17m - Node 1230
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)


NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 123.17m - Node 1230
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100



NPP KRSKO FRS
AUXILIARY BUILDING - ELEVATION 123.17m - Node 1230
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0.1
1
10
100

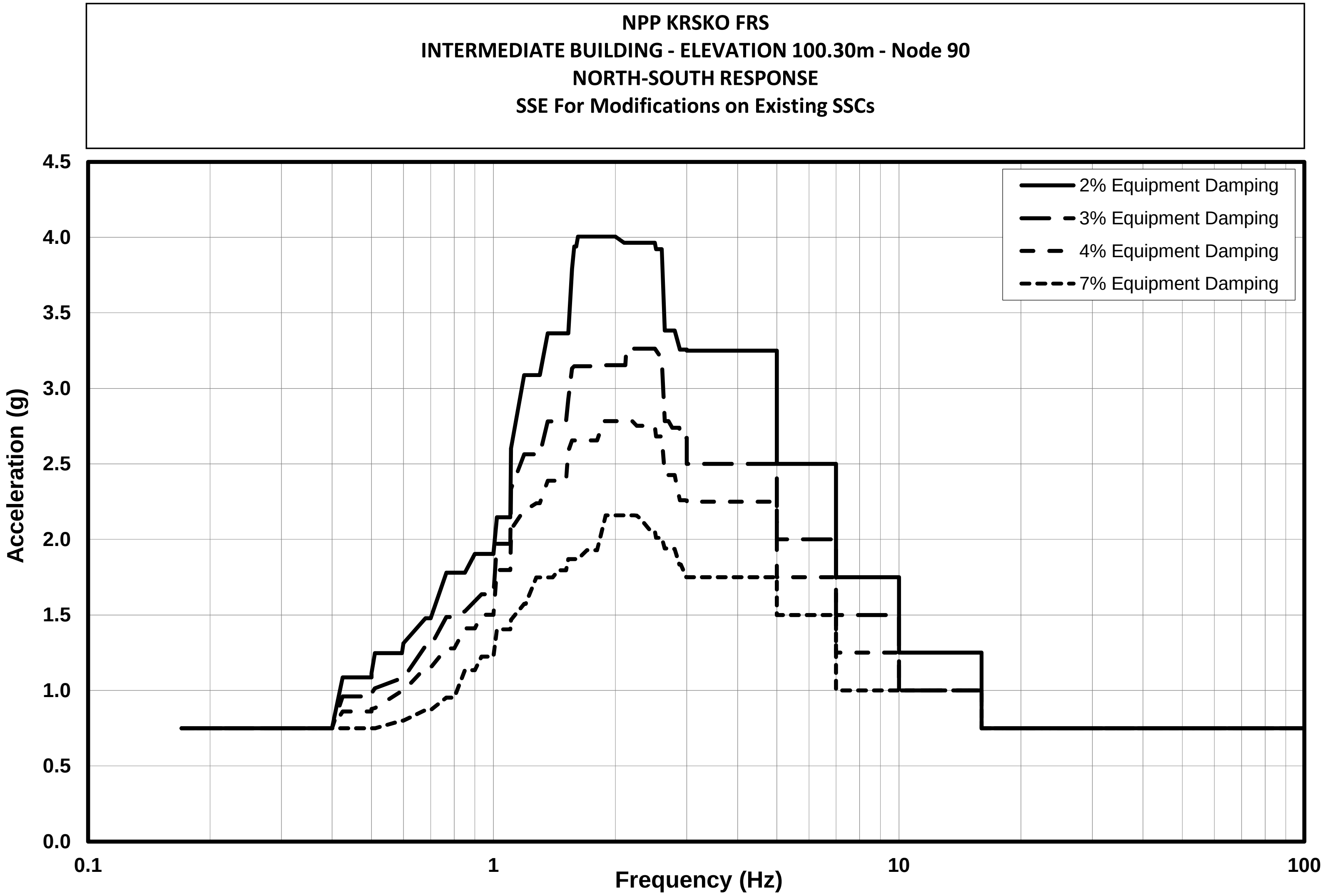
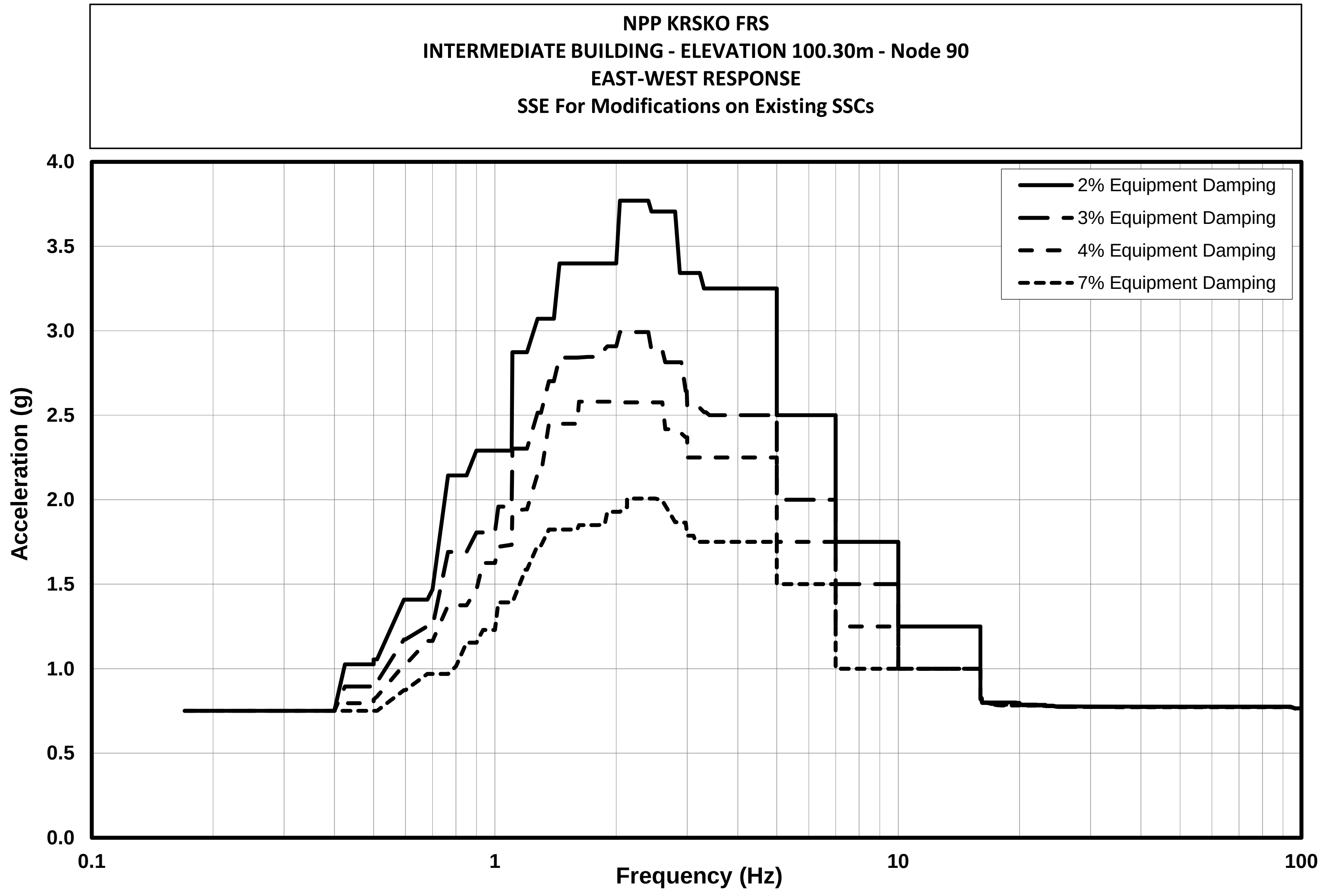
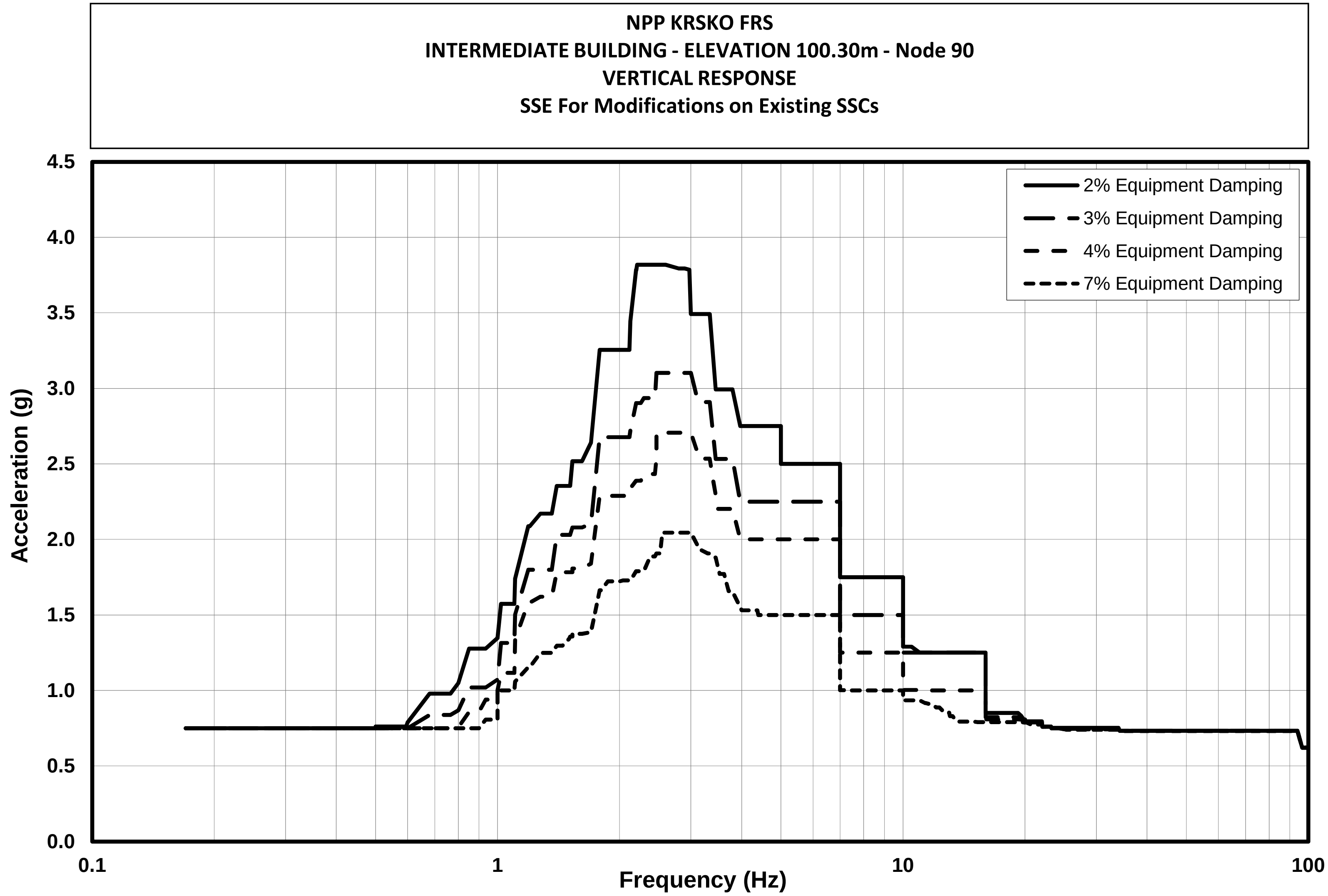

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 100.30m - Node 90
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

Figure B40

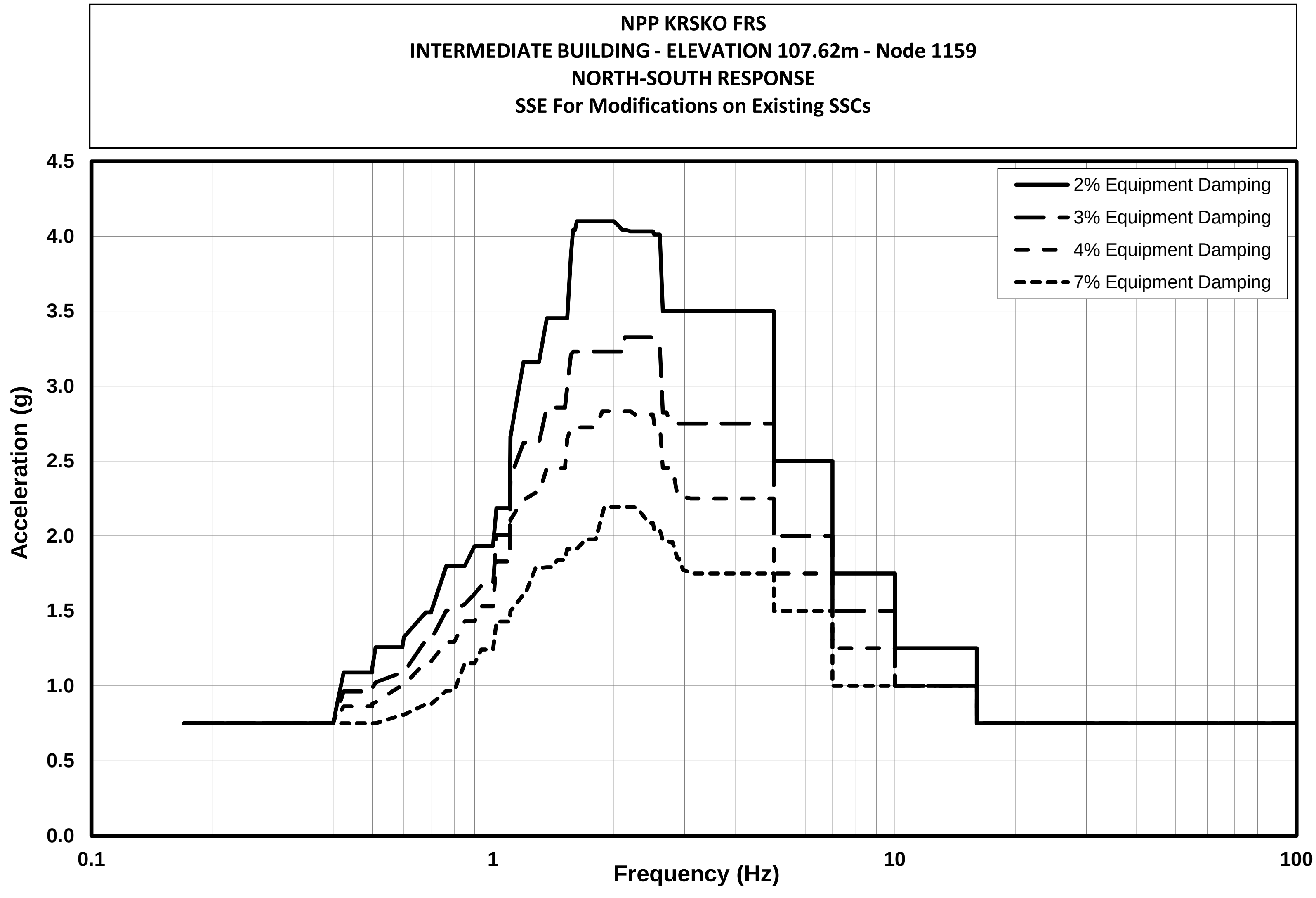


NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 100.30m - Node 90
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping



NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 100.30m - Node 90
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

Figure B42


NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 107.62m - Node 1159
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

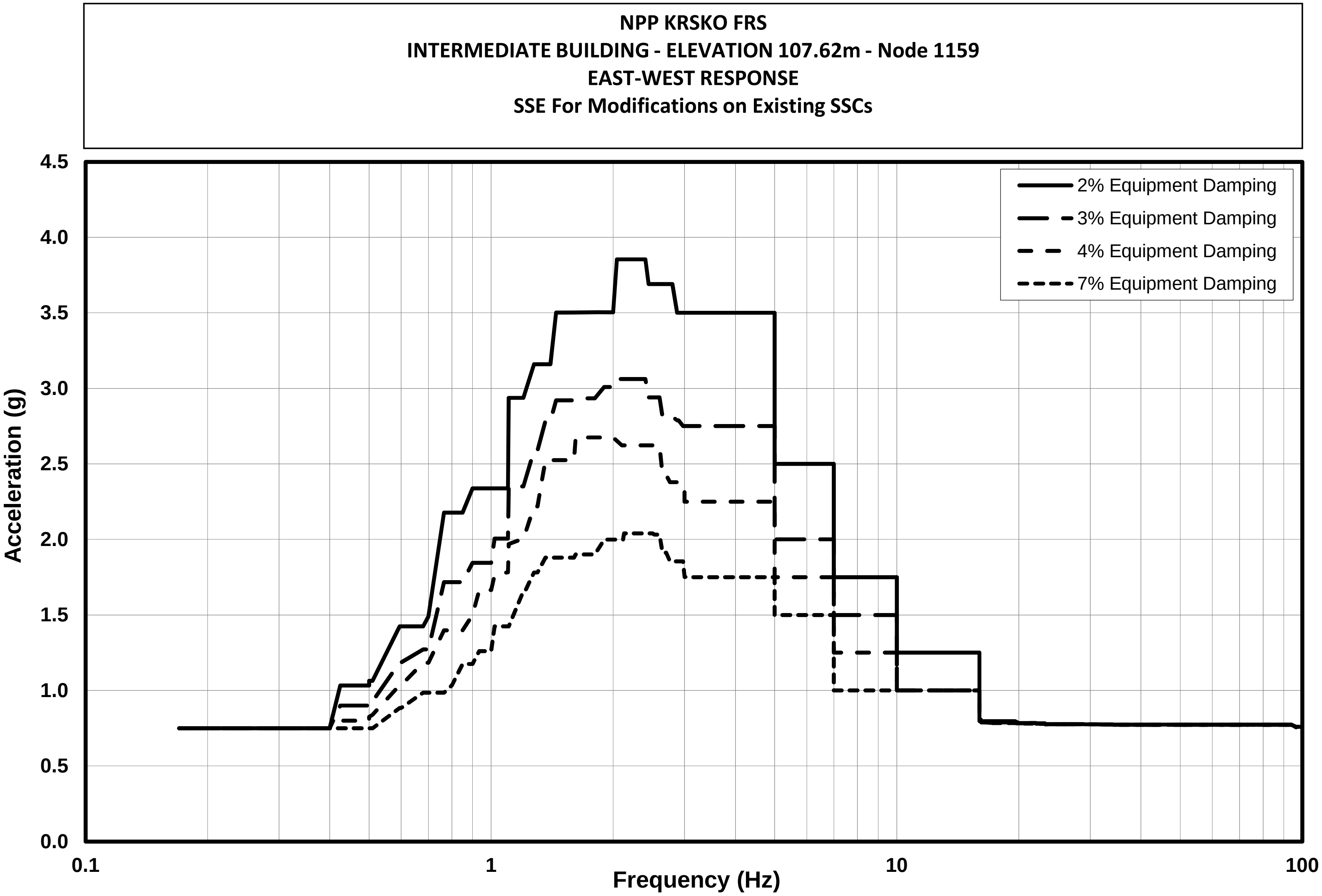
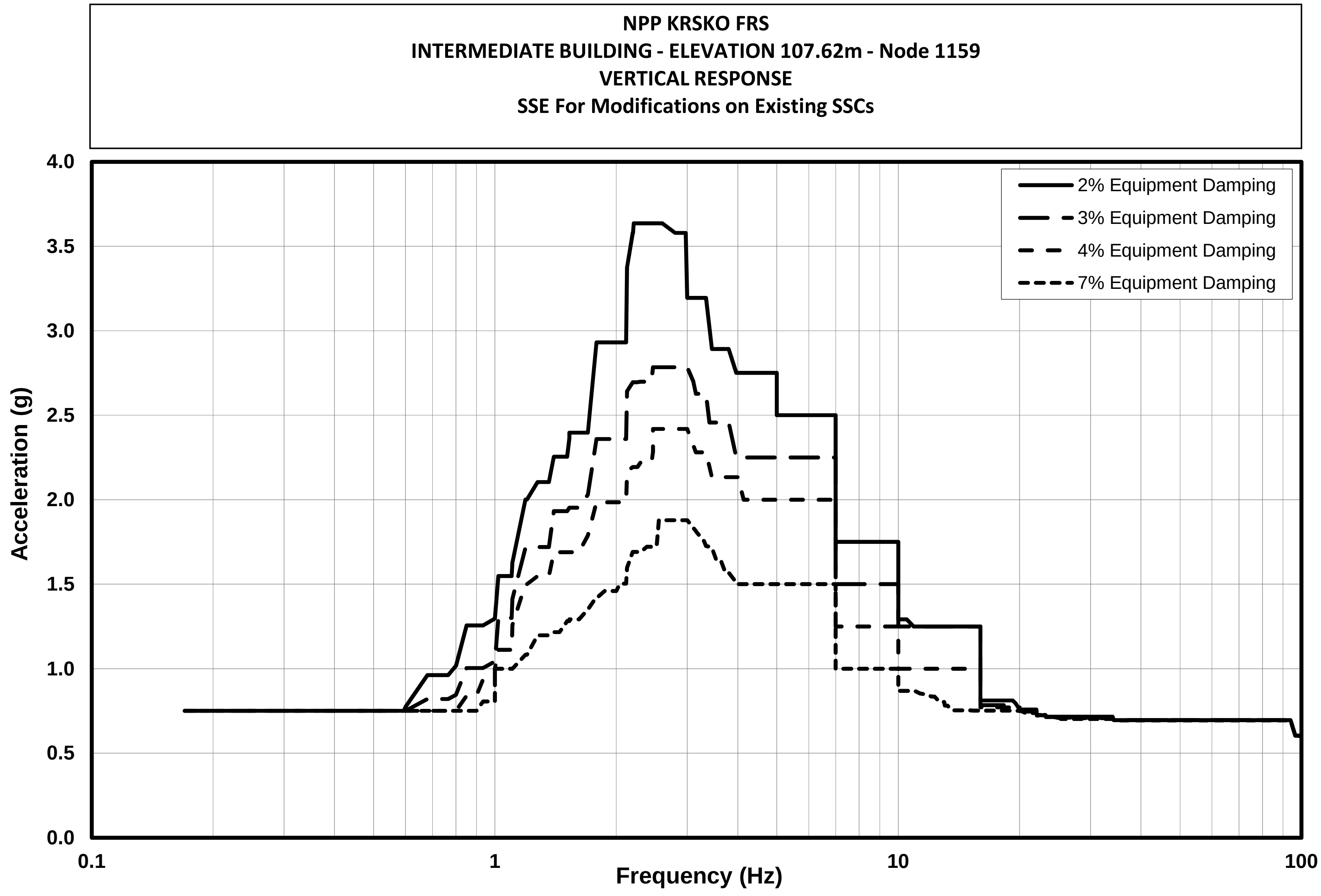
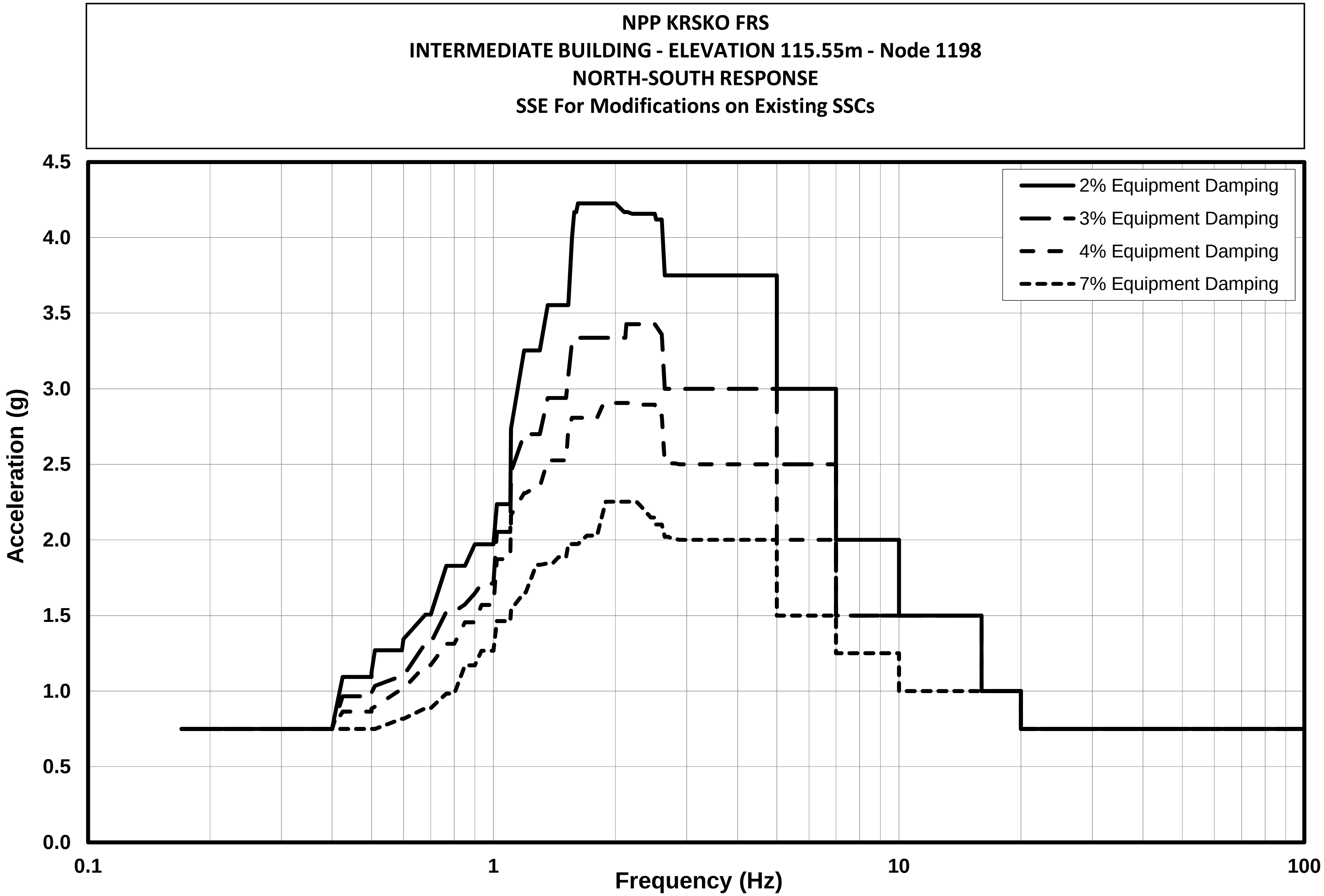
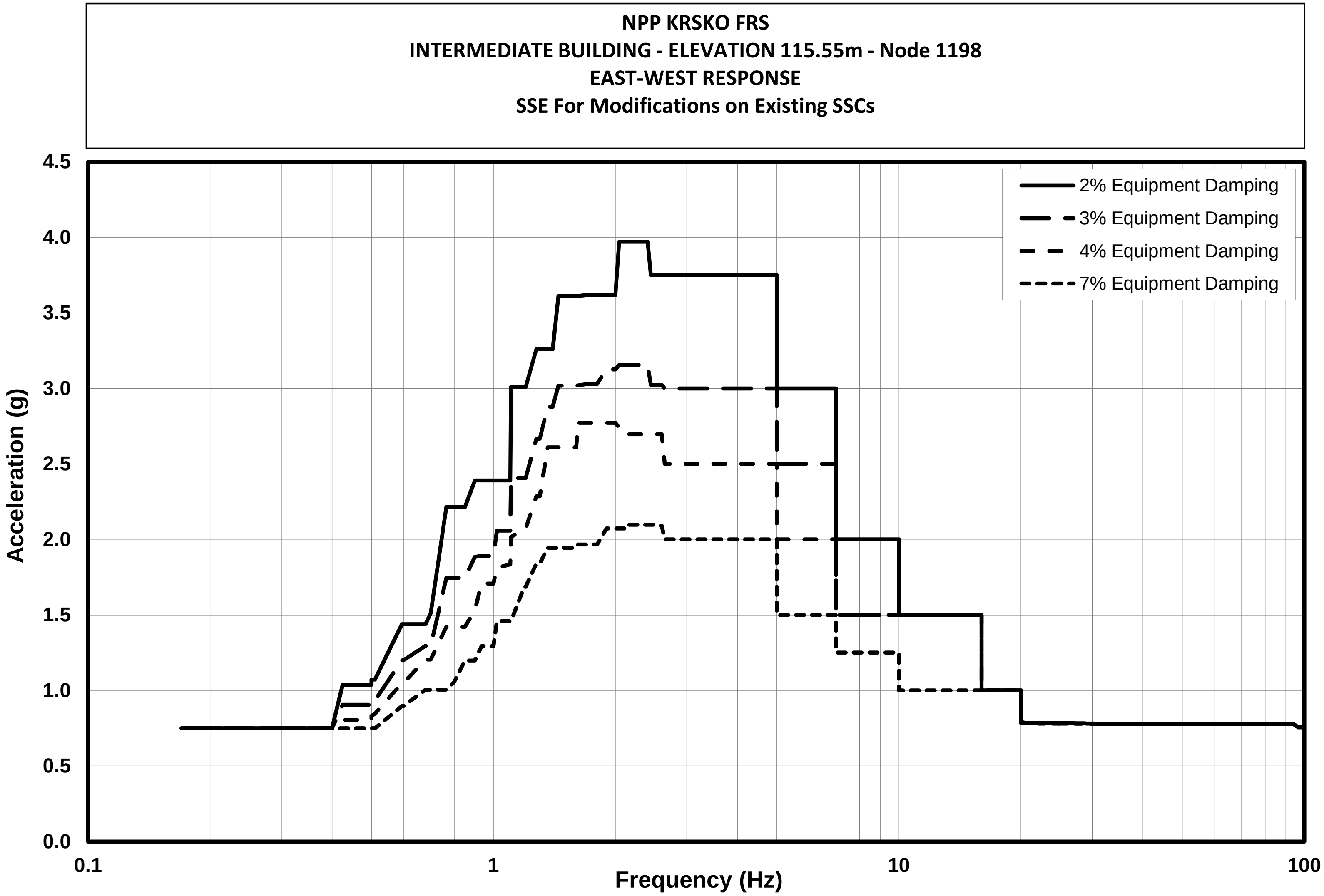
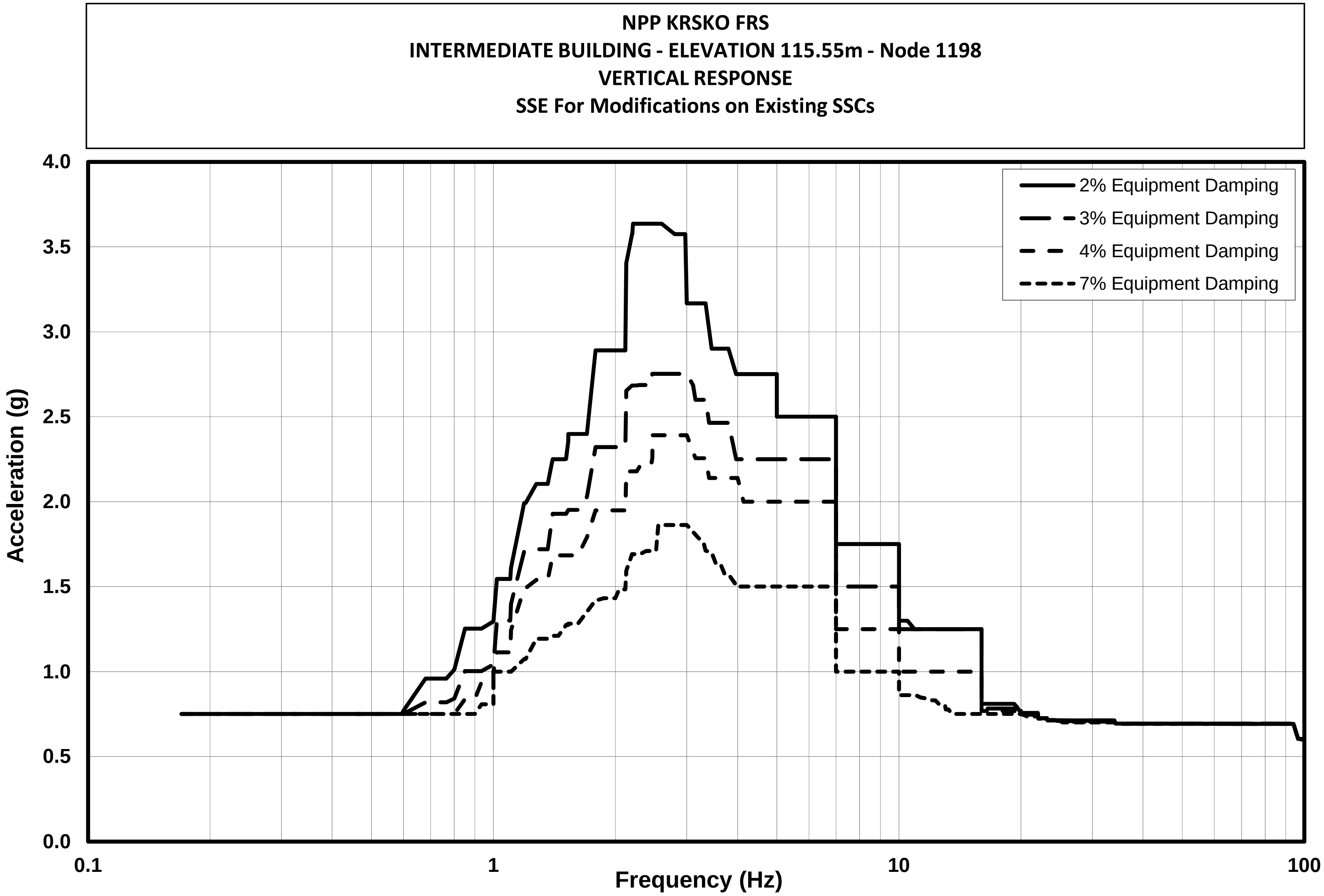

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 107.62m - Node 1159
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)

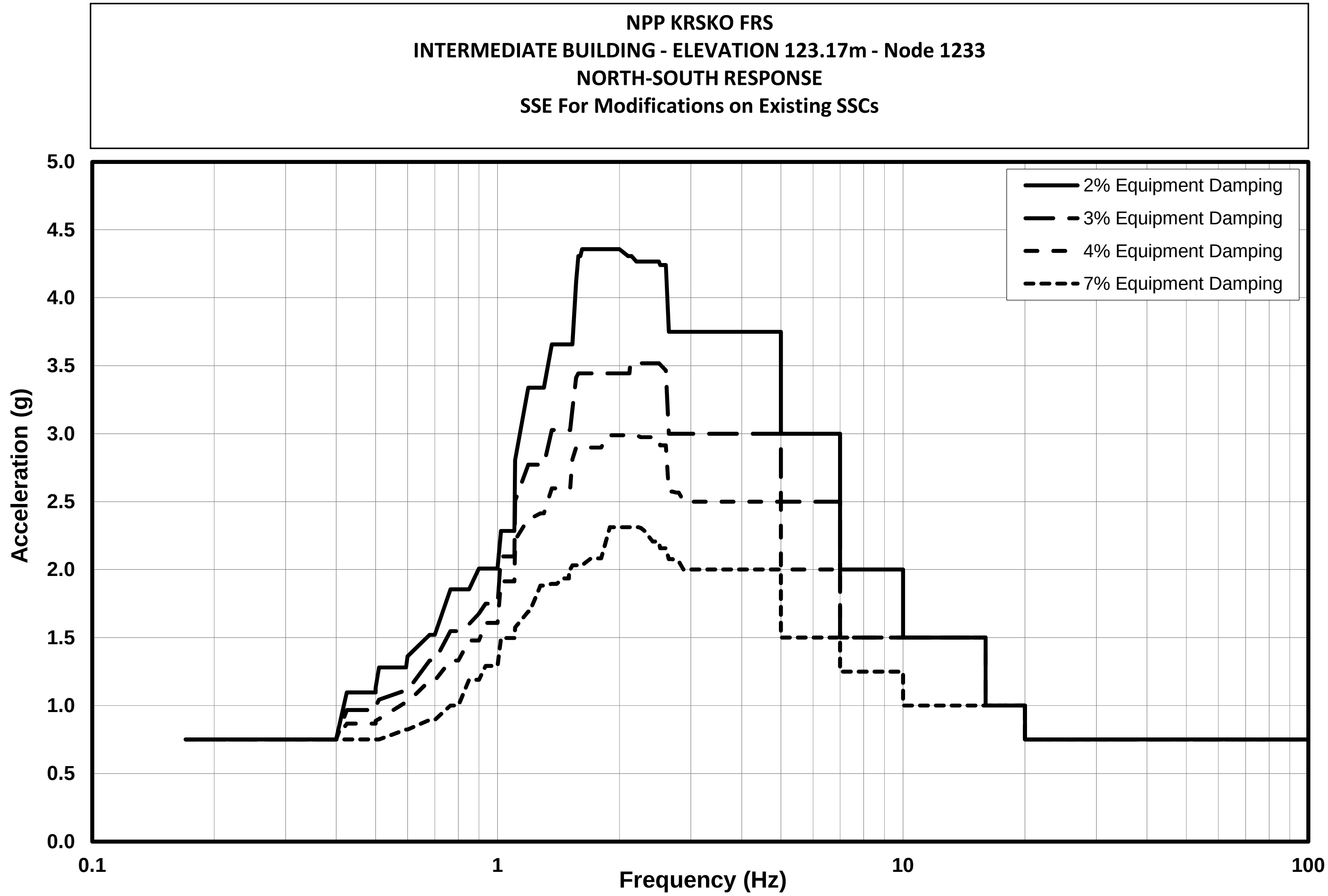
Figure B44

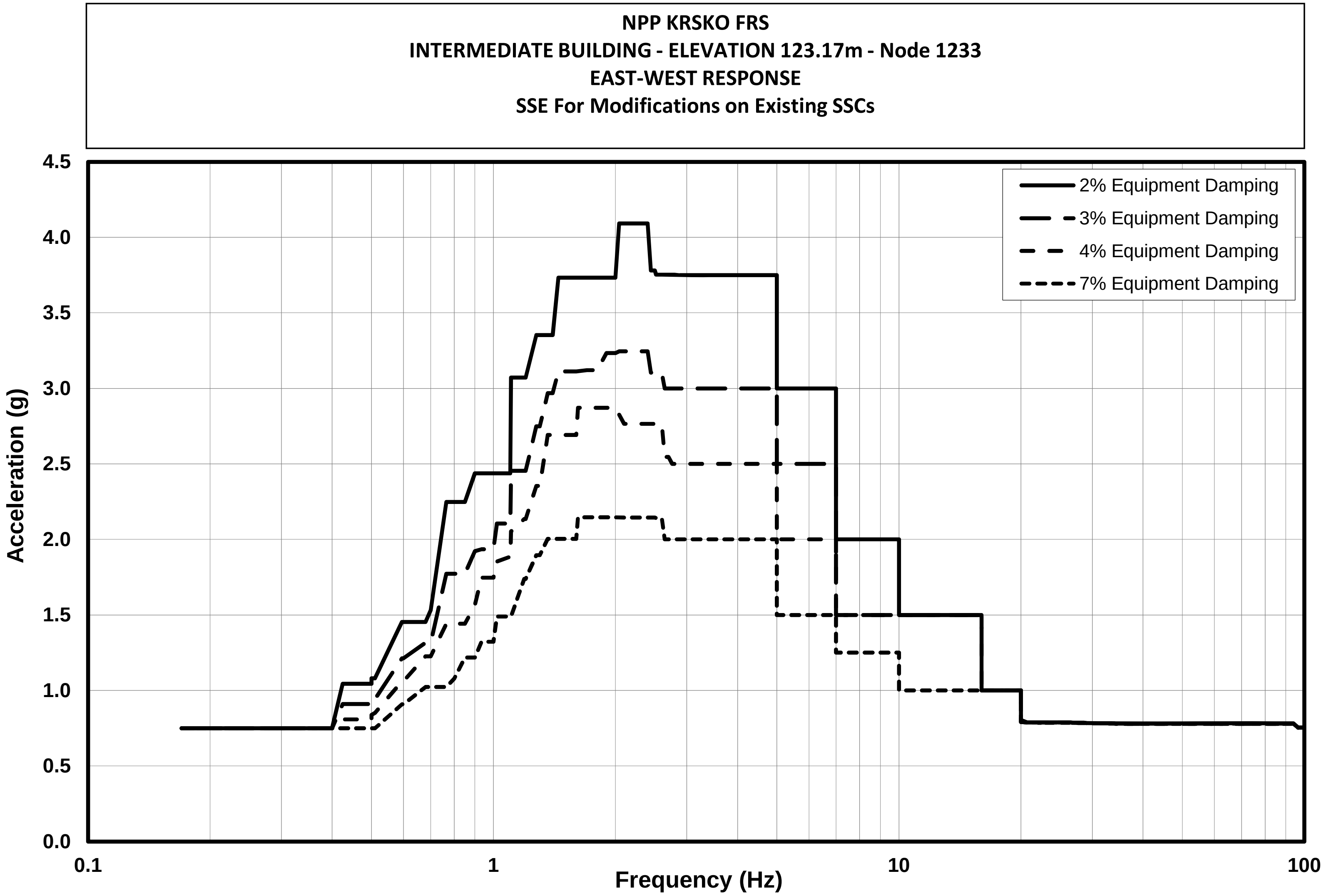

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 107.62m - Node 1159
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

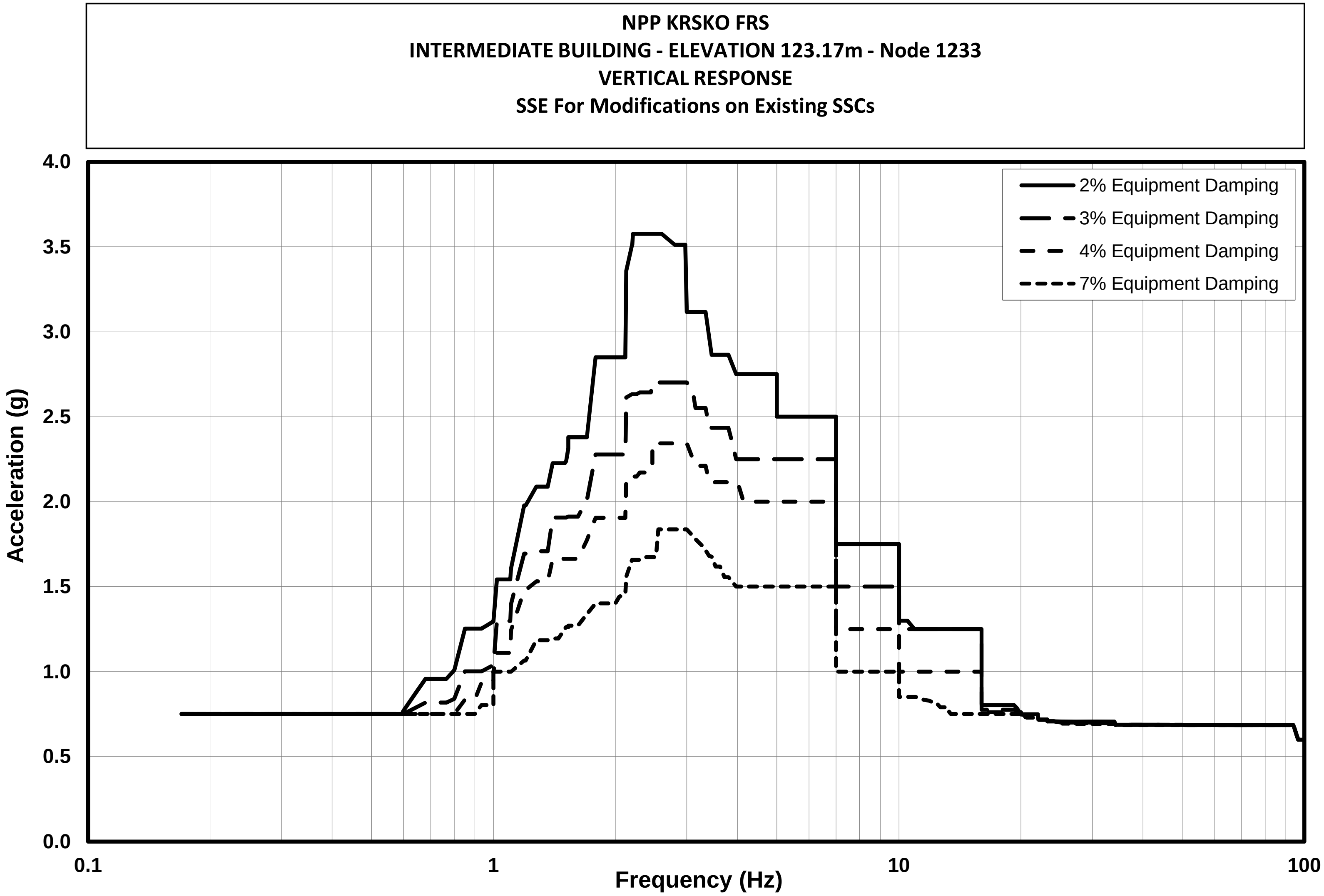

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 115.55m - Node 1198
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 115.55m - Node 1198
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 115.55m - Node 1198
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.1
1
10
100

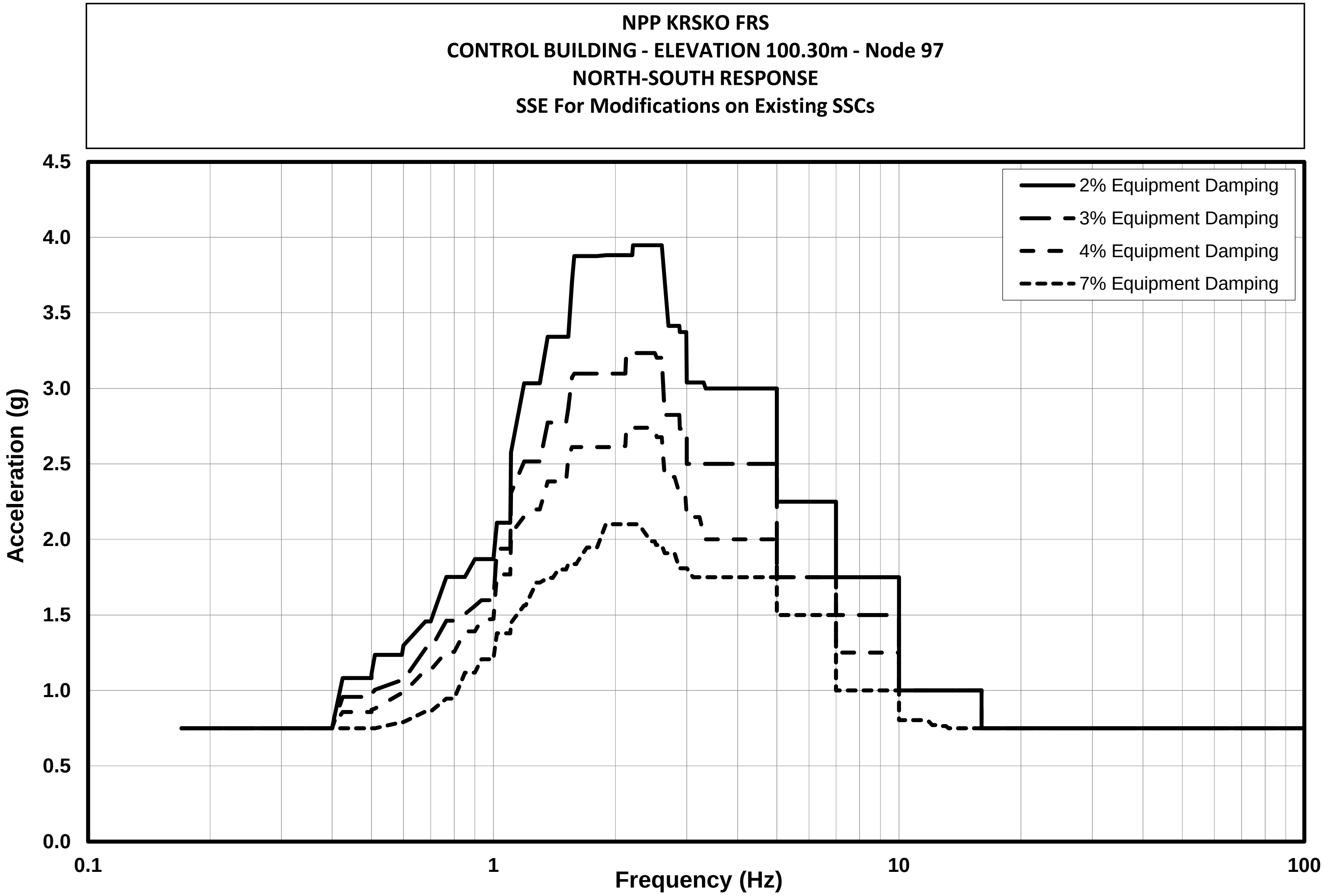

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 123.17m - Node 1233
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

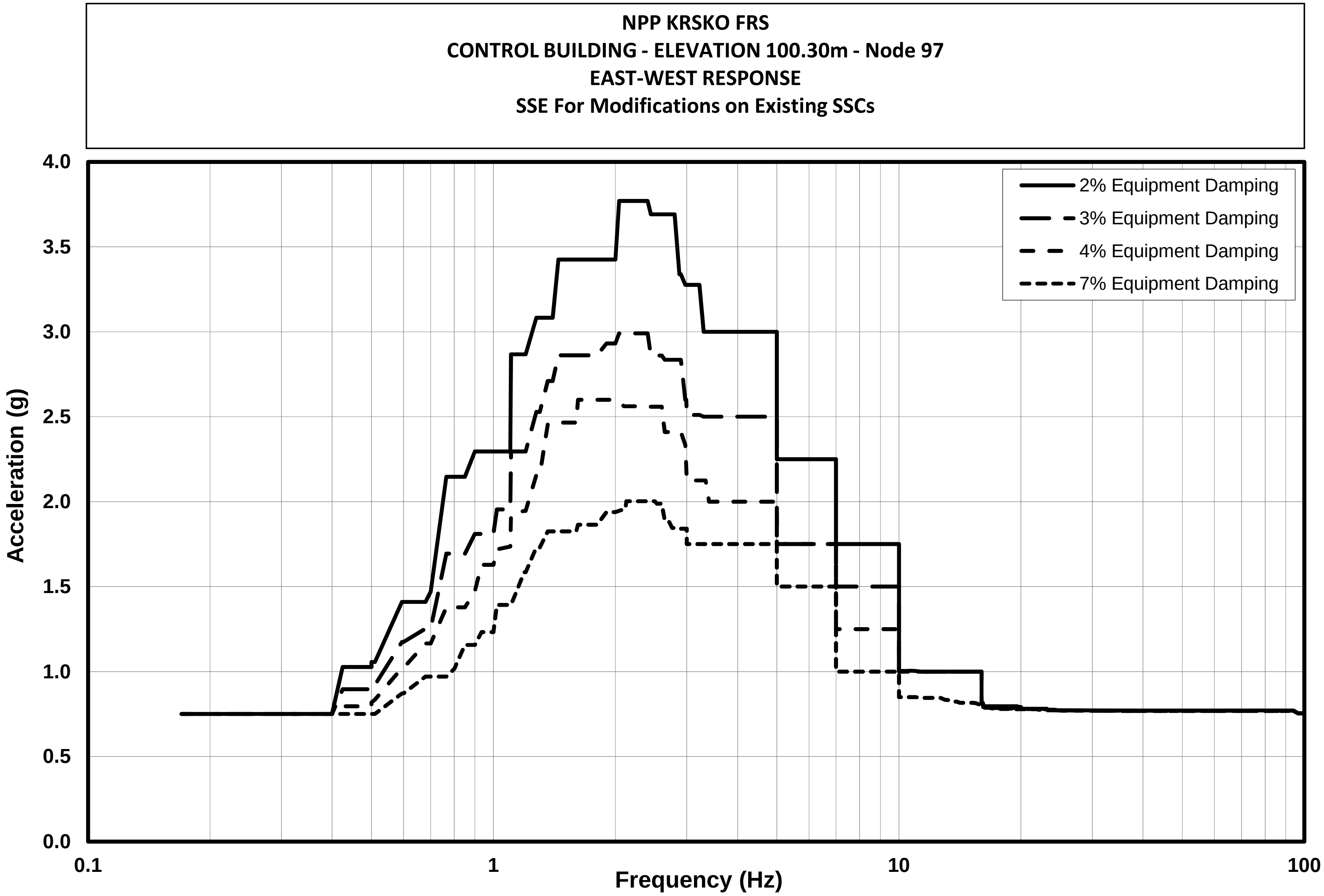

NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 123.17m - Node 1233
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

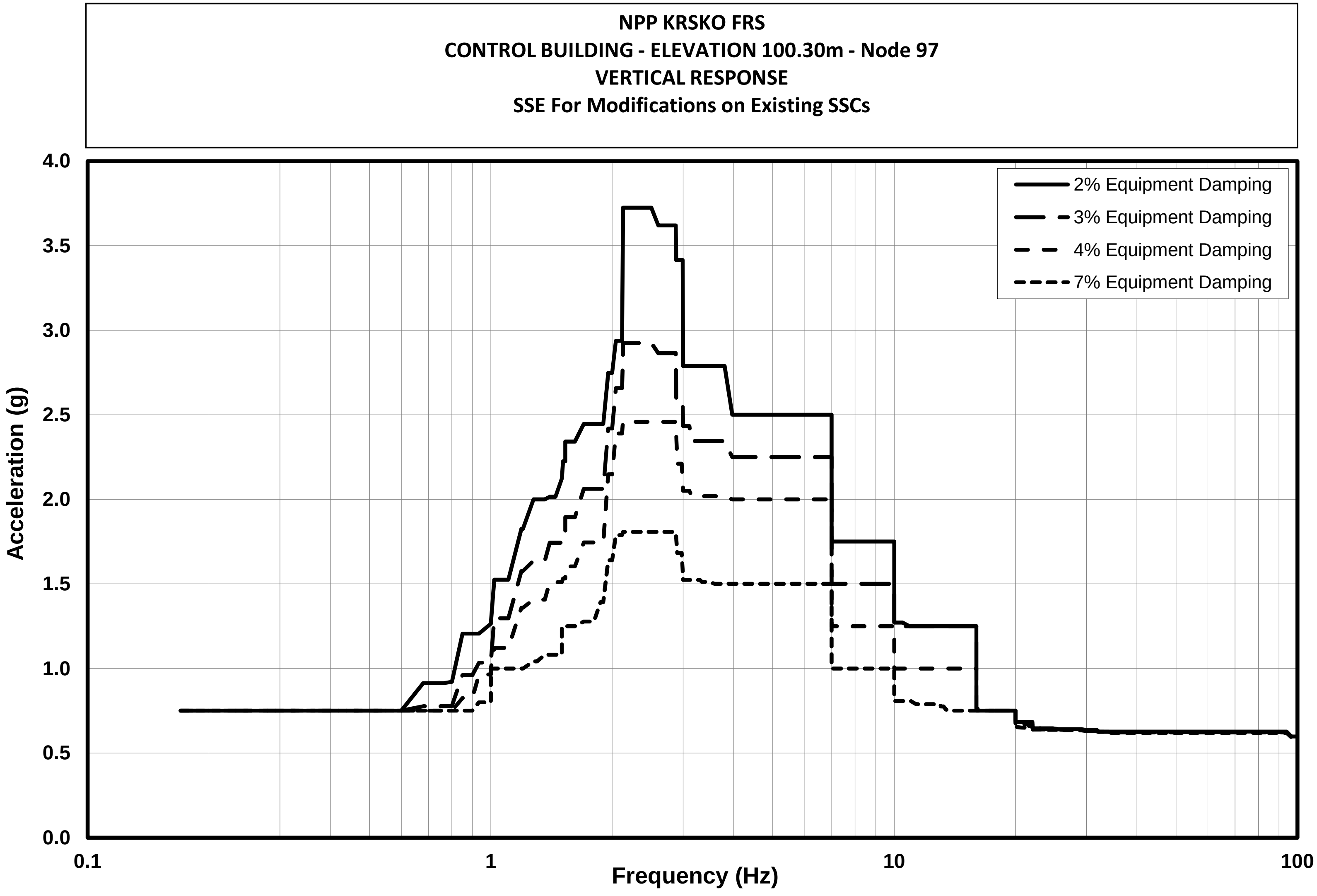


NPP KRSKO FRS
INTERMEDIATE BUILDING - ELEVATION 123.17m - Node 1233
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.1
1
10
100

Figure B51


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 100.30m - Node 97
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 100.30m - Node 97
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 100.30m - Node 97
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.1
1
10
100

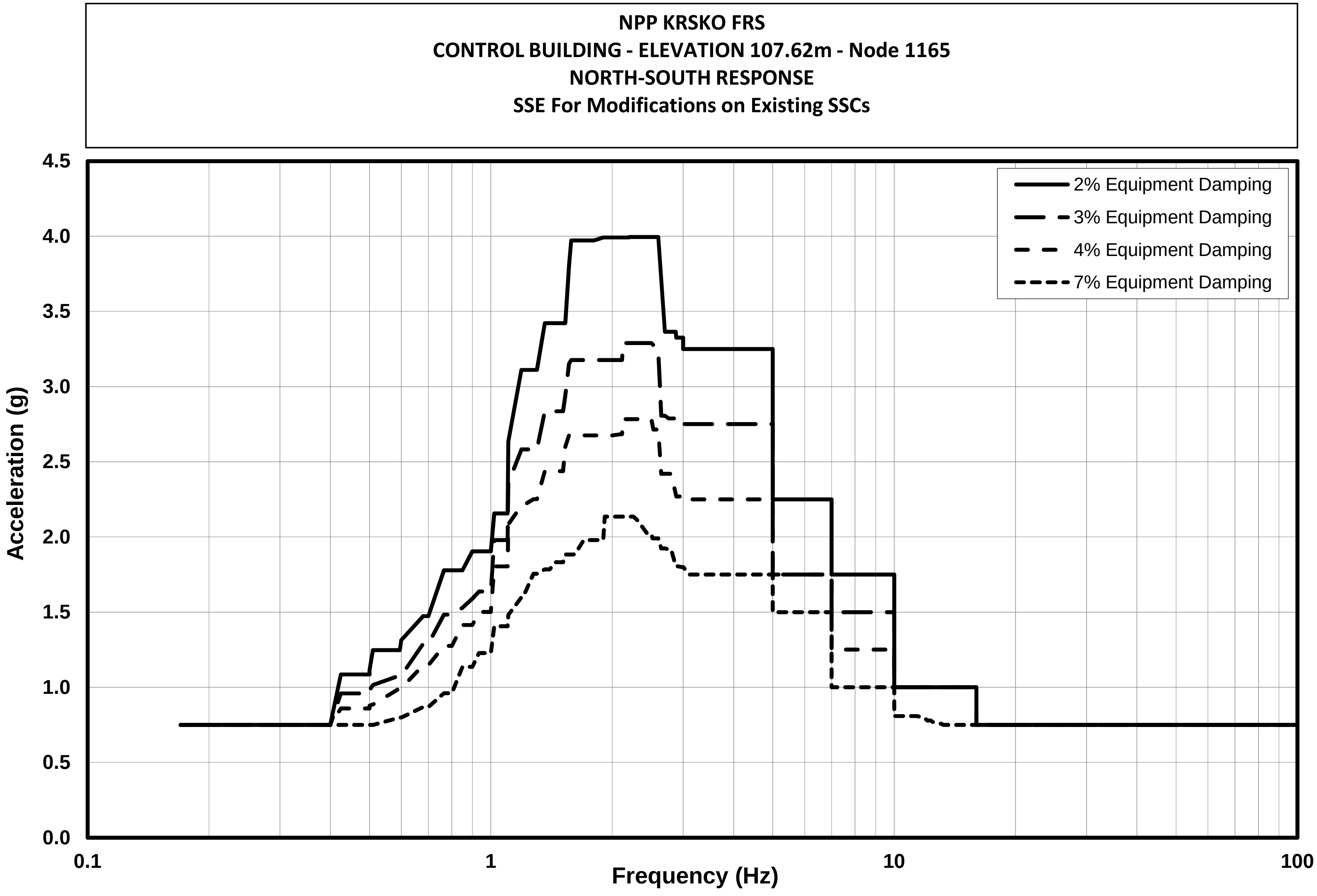
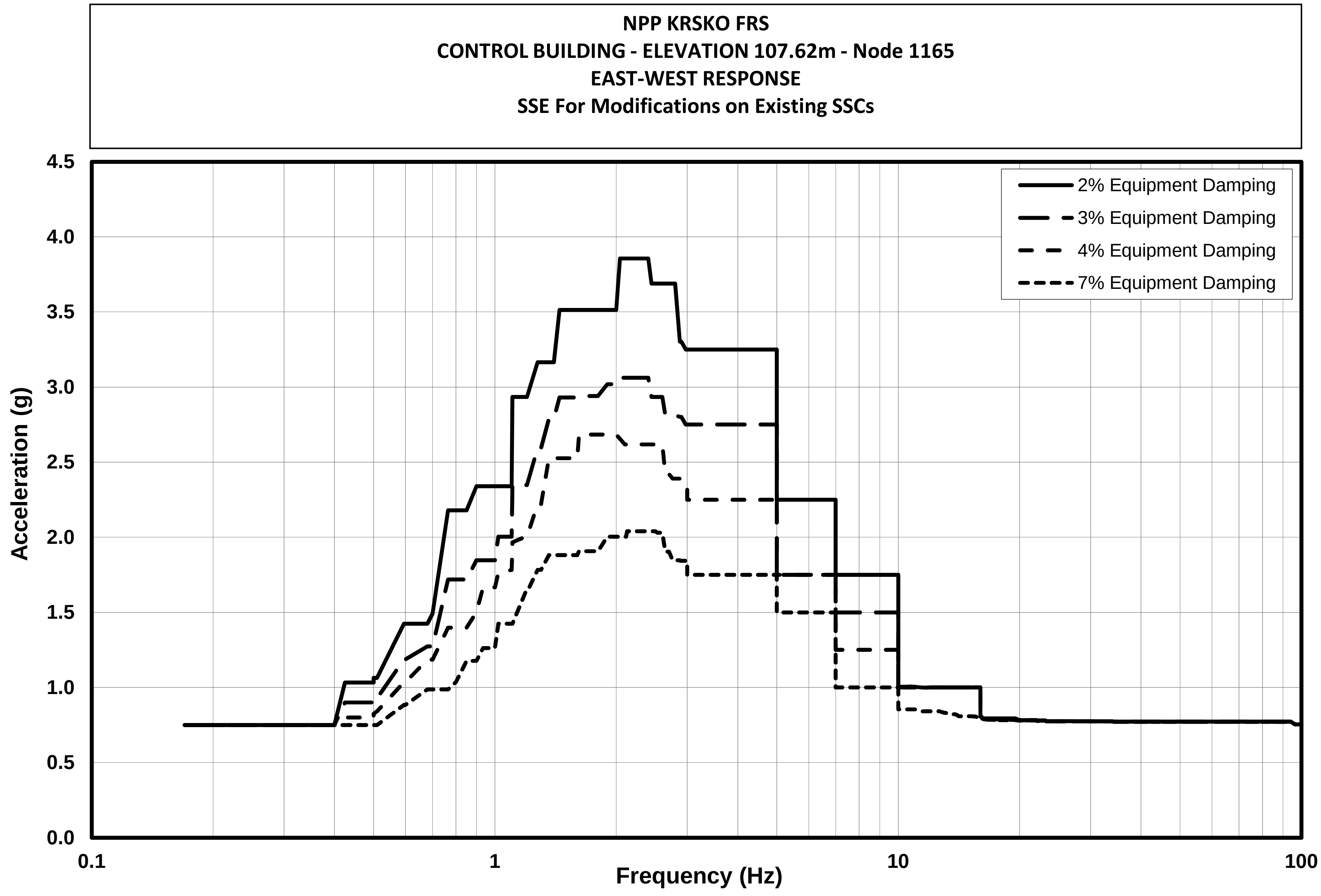
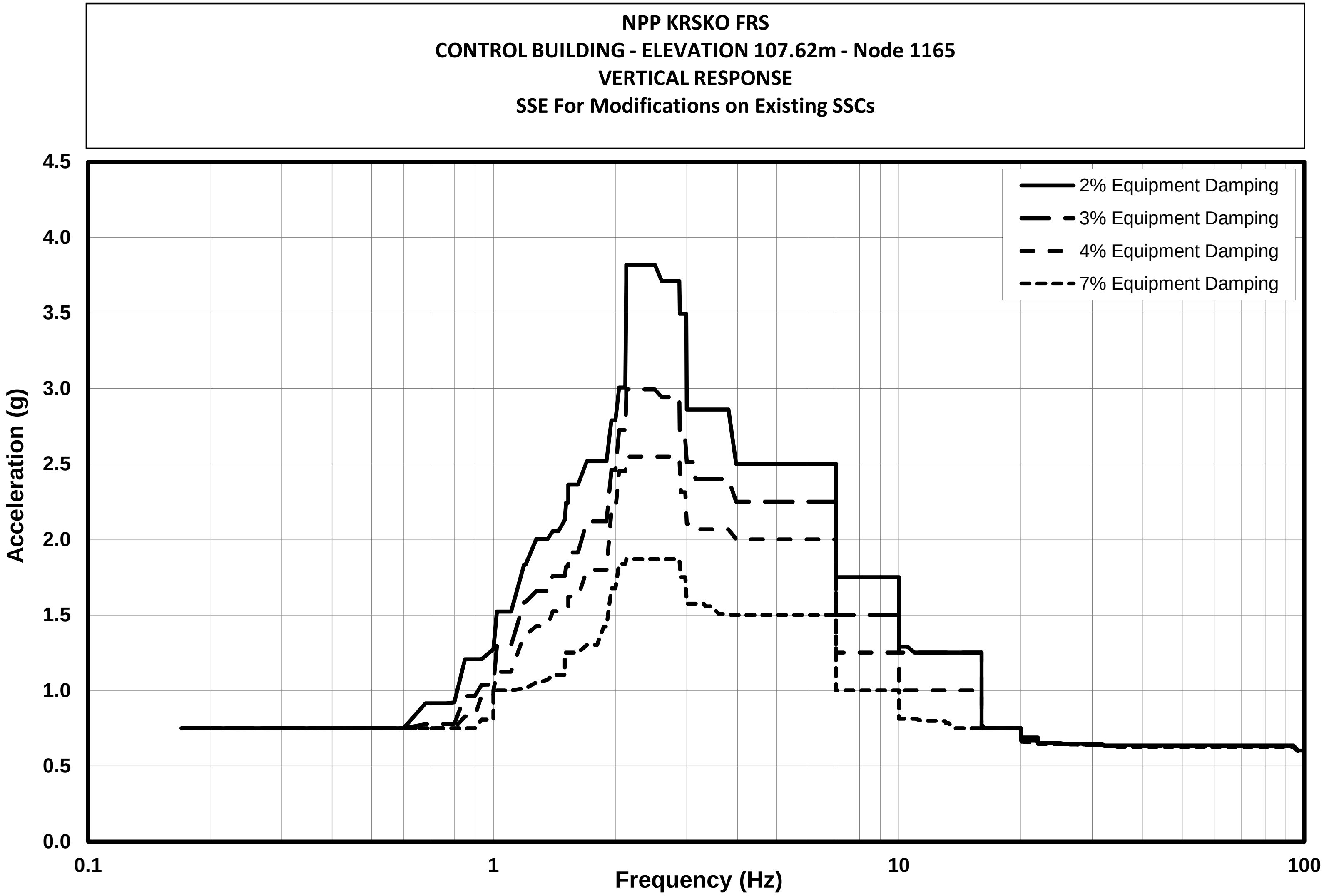
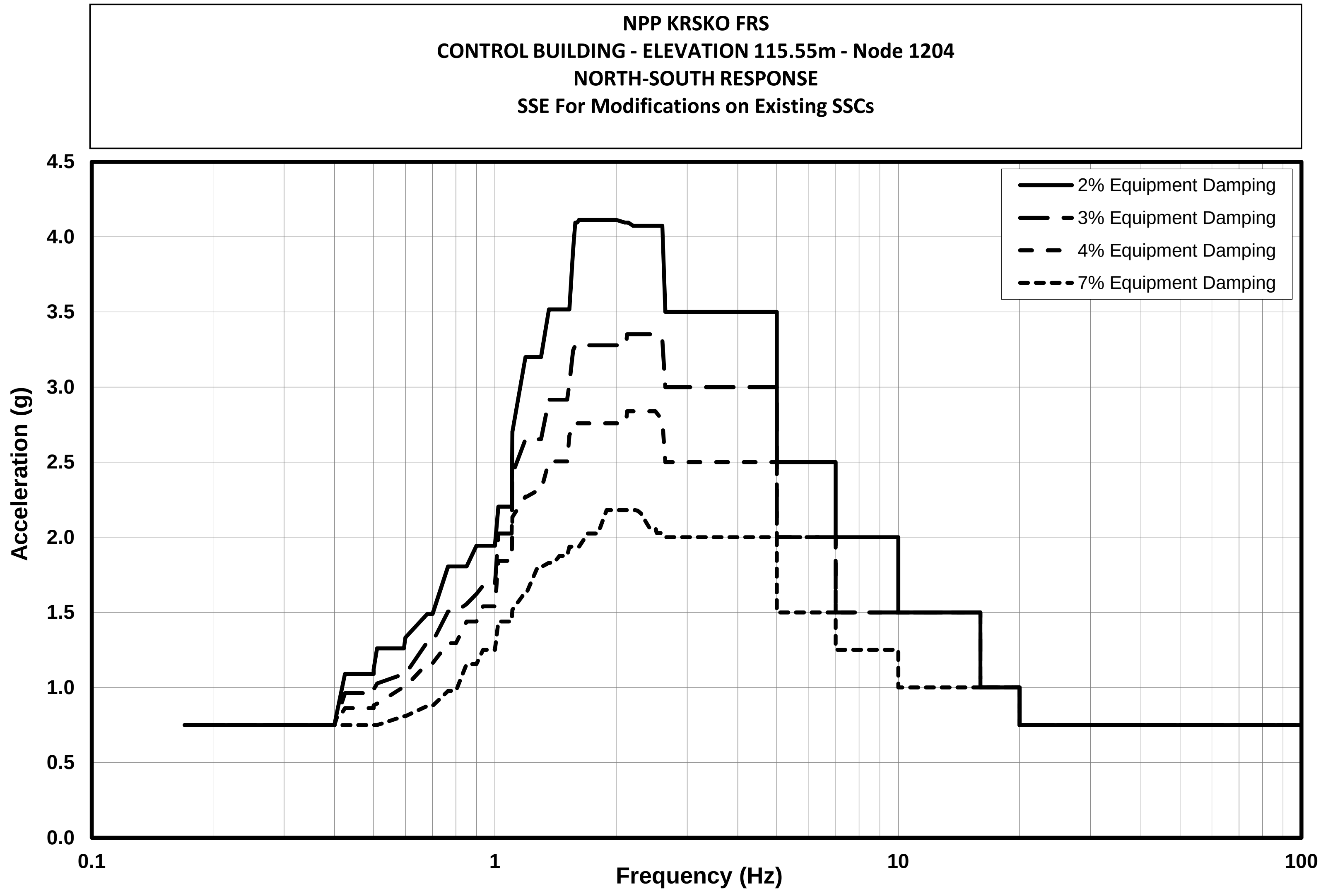

NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 107.62m - Node 1165
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B55


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 107.62m - Node 1165
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 107.62m - Node 1165
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 115.55m - Node 1204
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

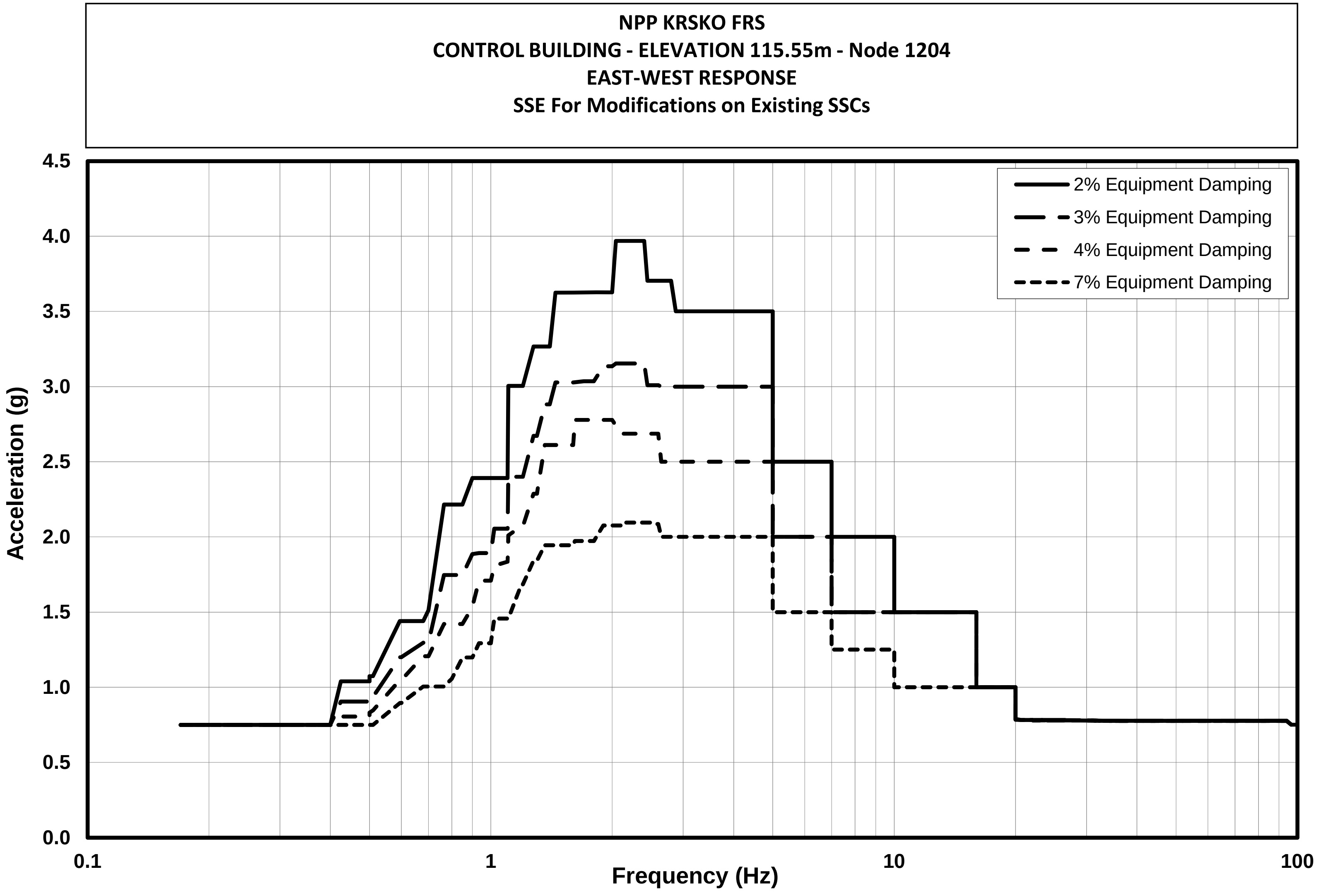

NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 115.55m - Node 1204
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B59

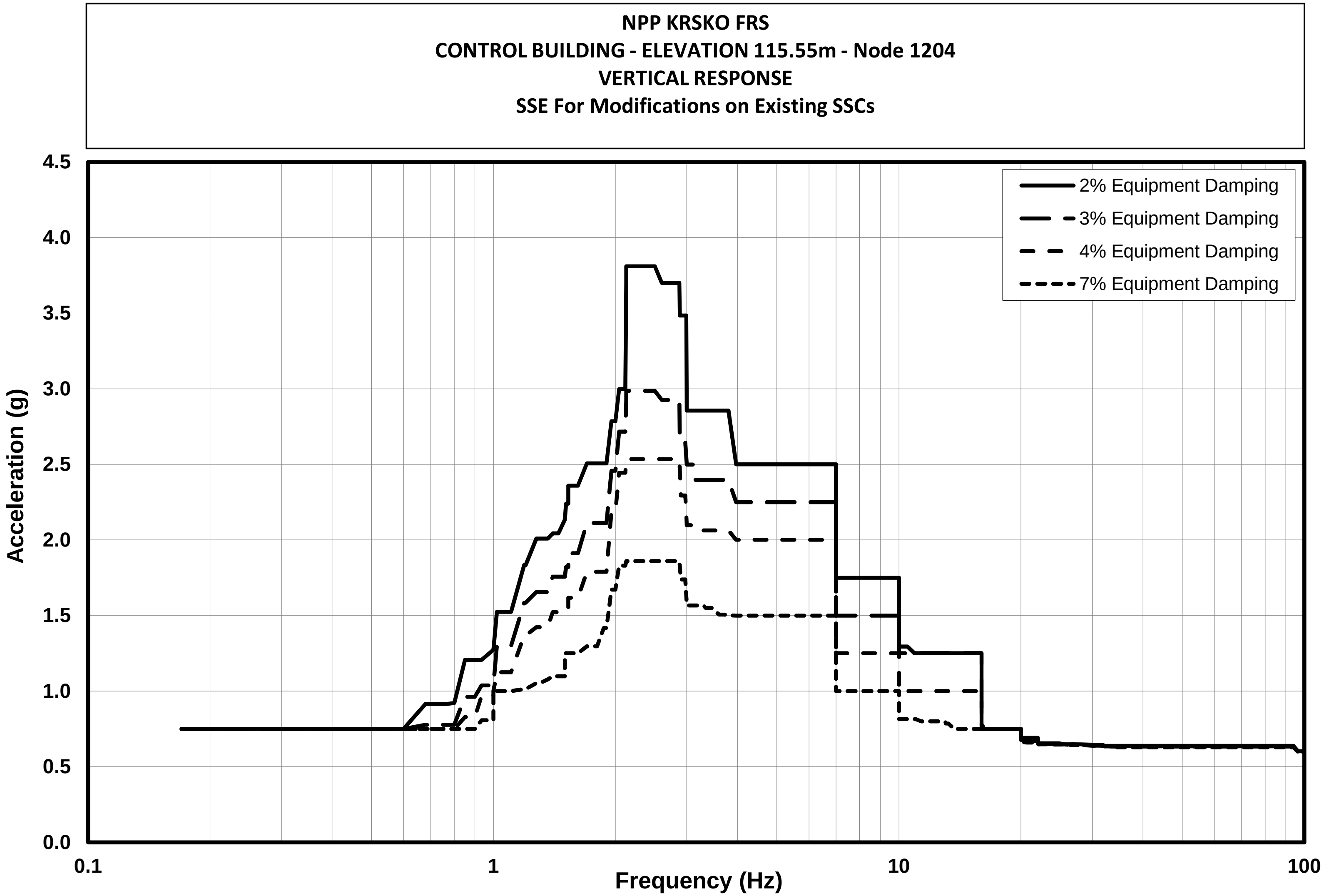
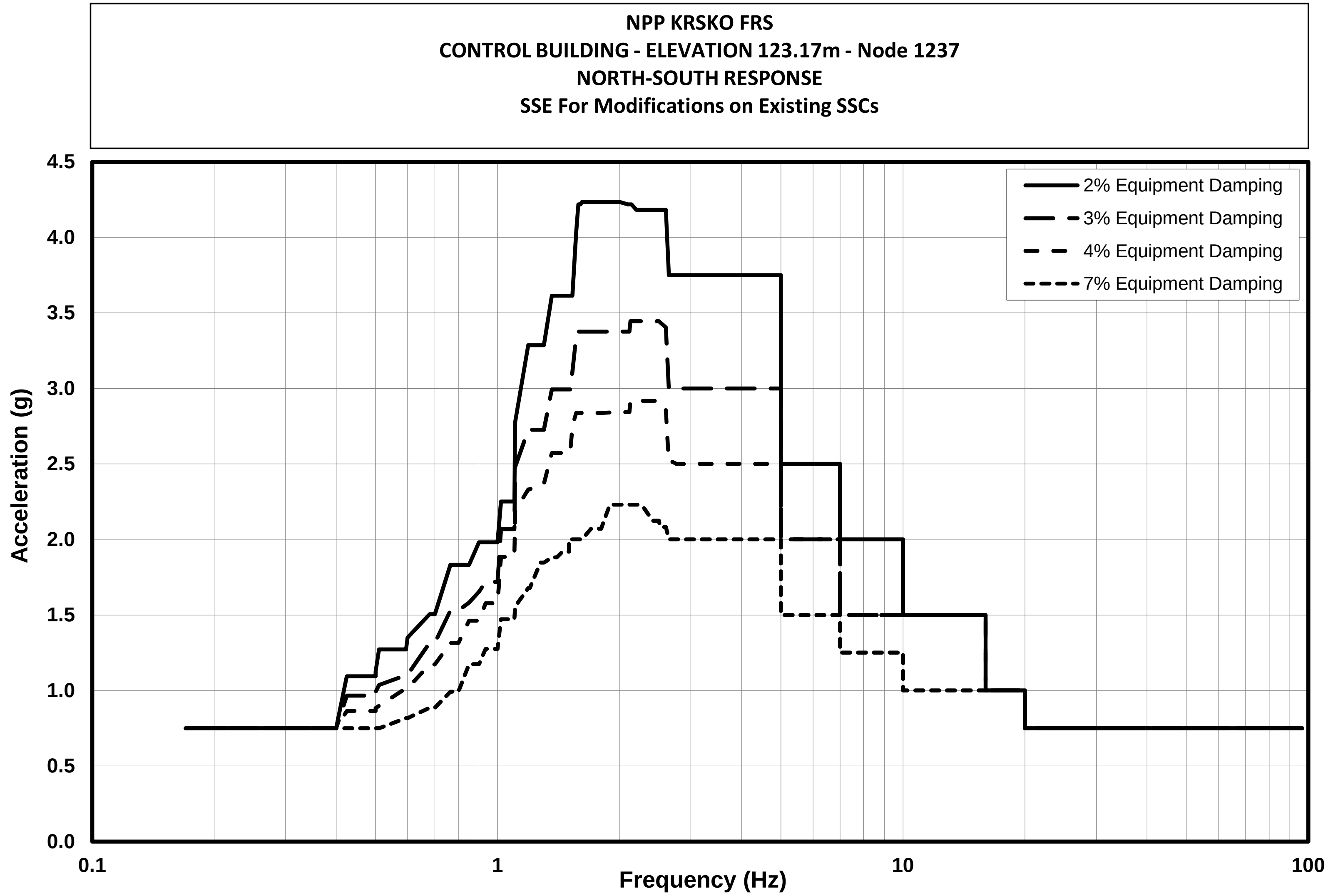
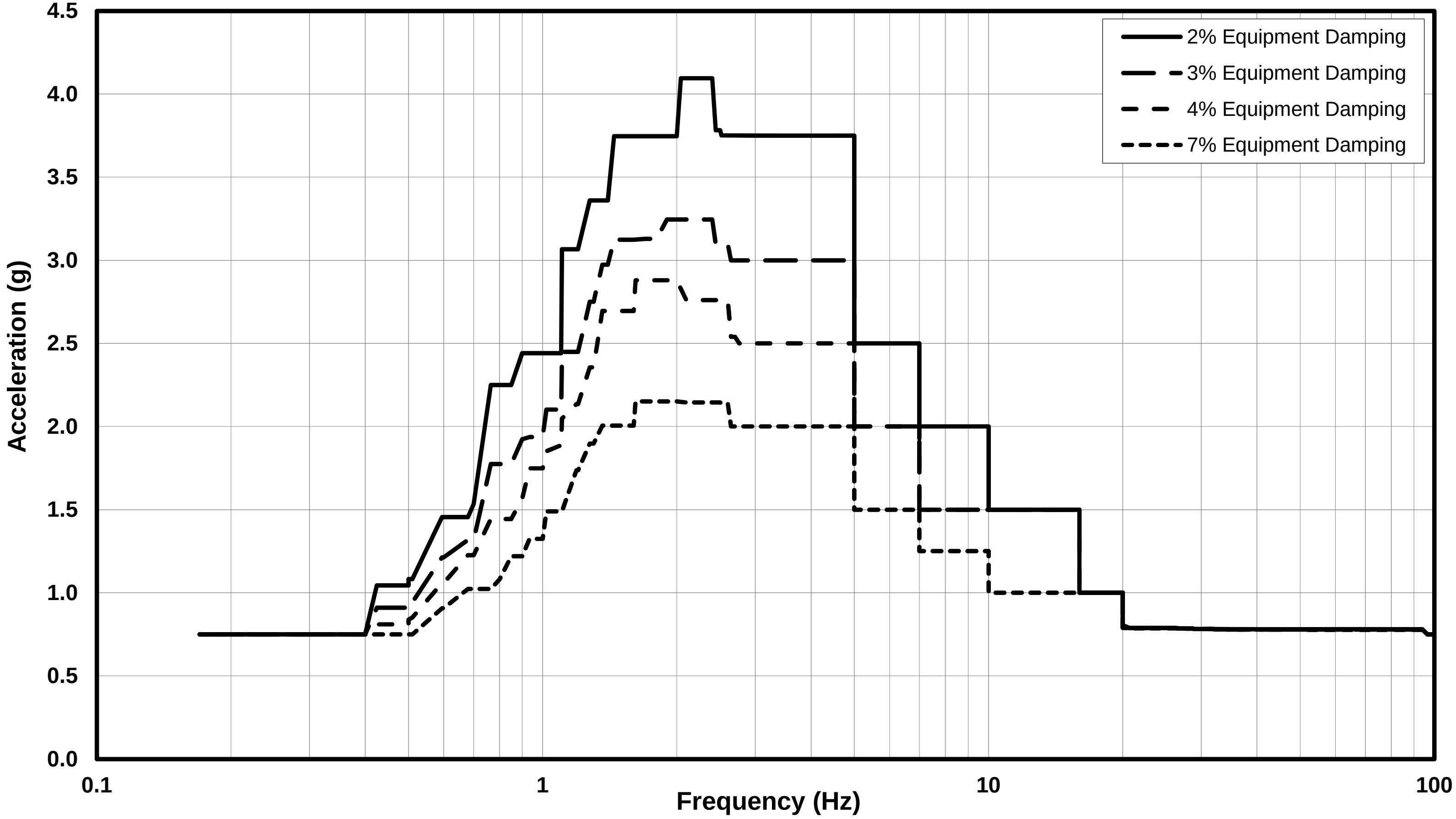
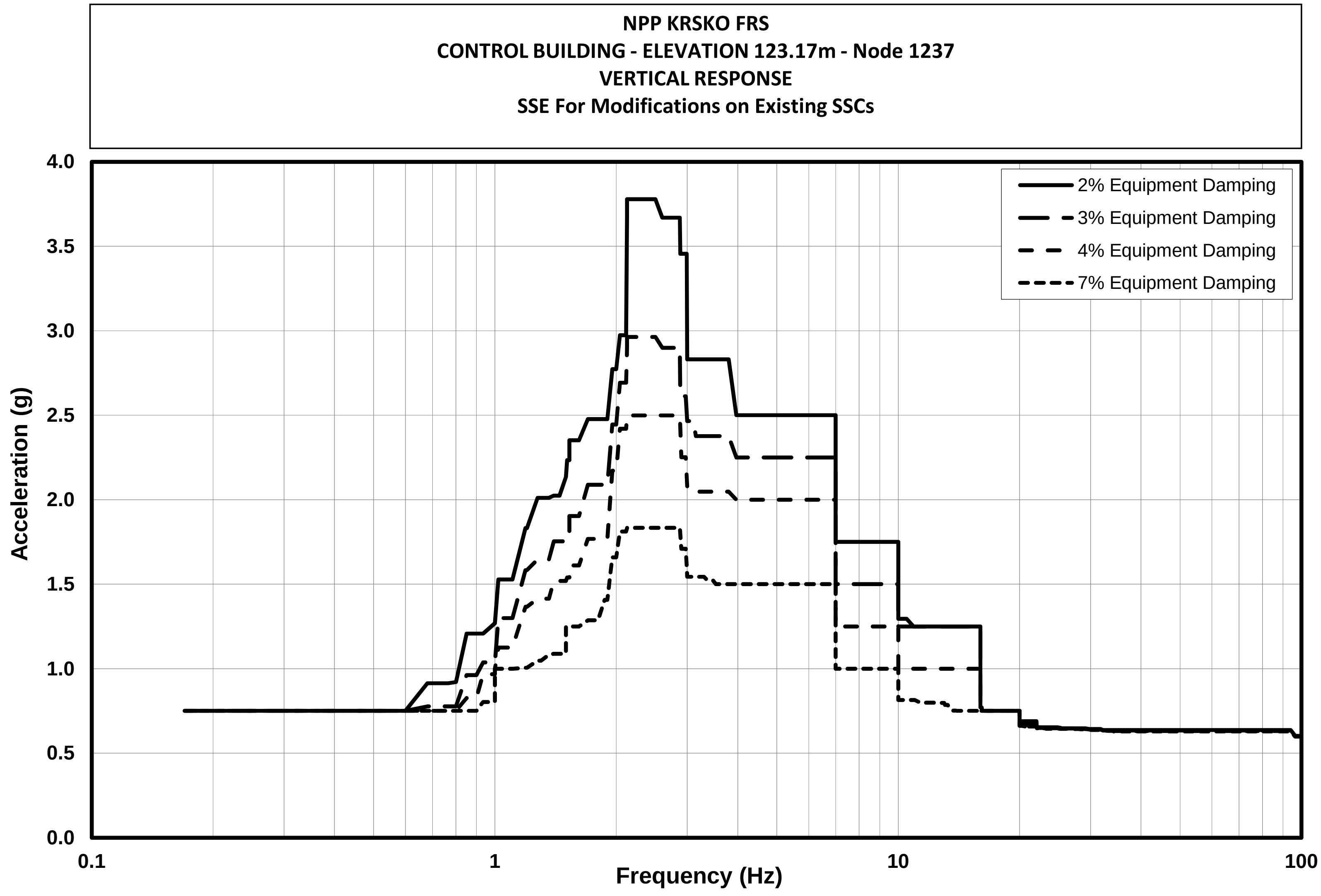

NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 115.55m - Node 1204
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

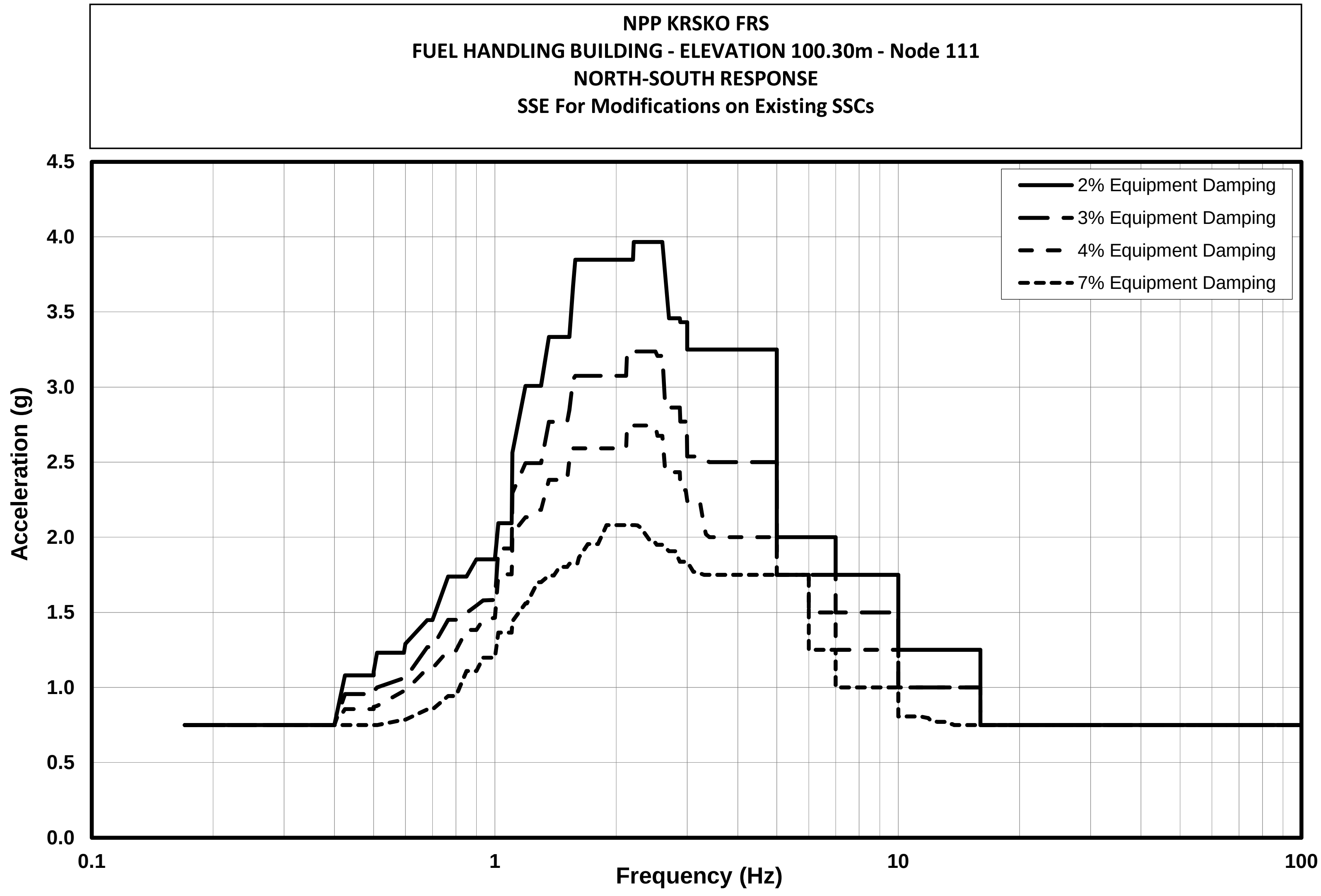
Figure B60


NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 123.17m - Node 1237
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 123.17m - Node 1237
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs




NPP KRSKO FRS
CONTROL BUILDING - ELEVATION 123.17m - Node 1237
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 100.30m - Node 111
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

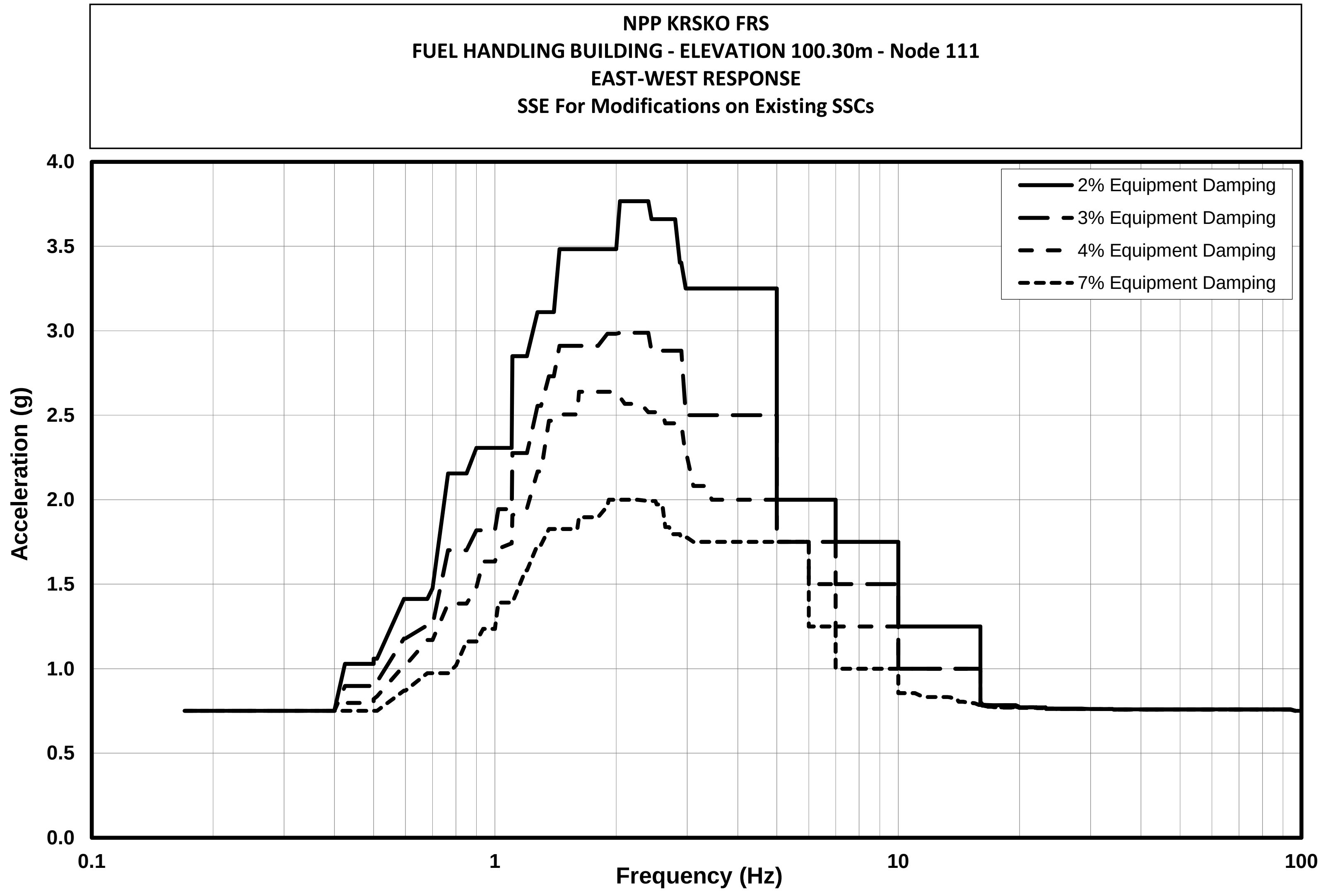
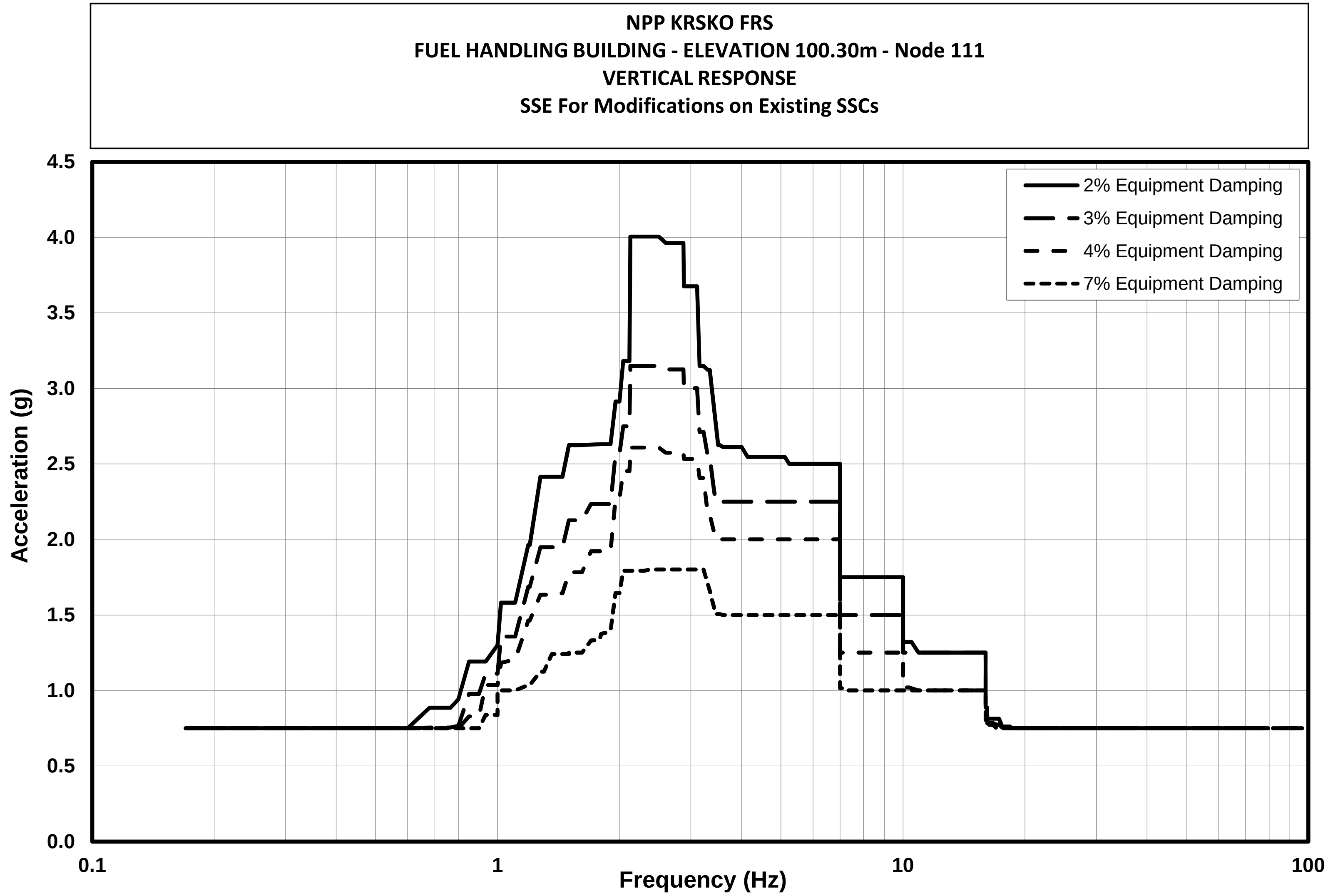

NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 100.30m - Node 111
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B65


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 100.30m - Node 111
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

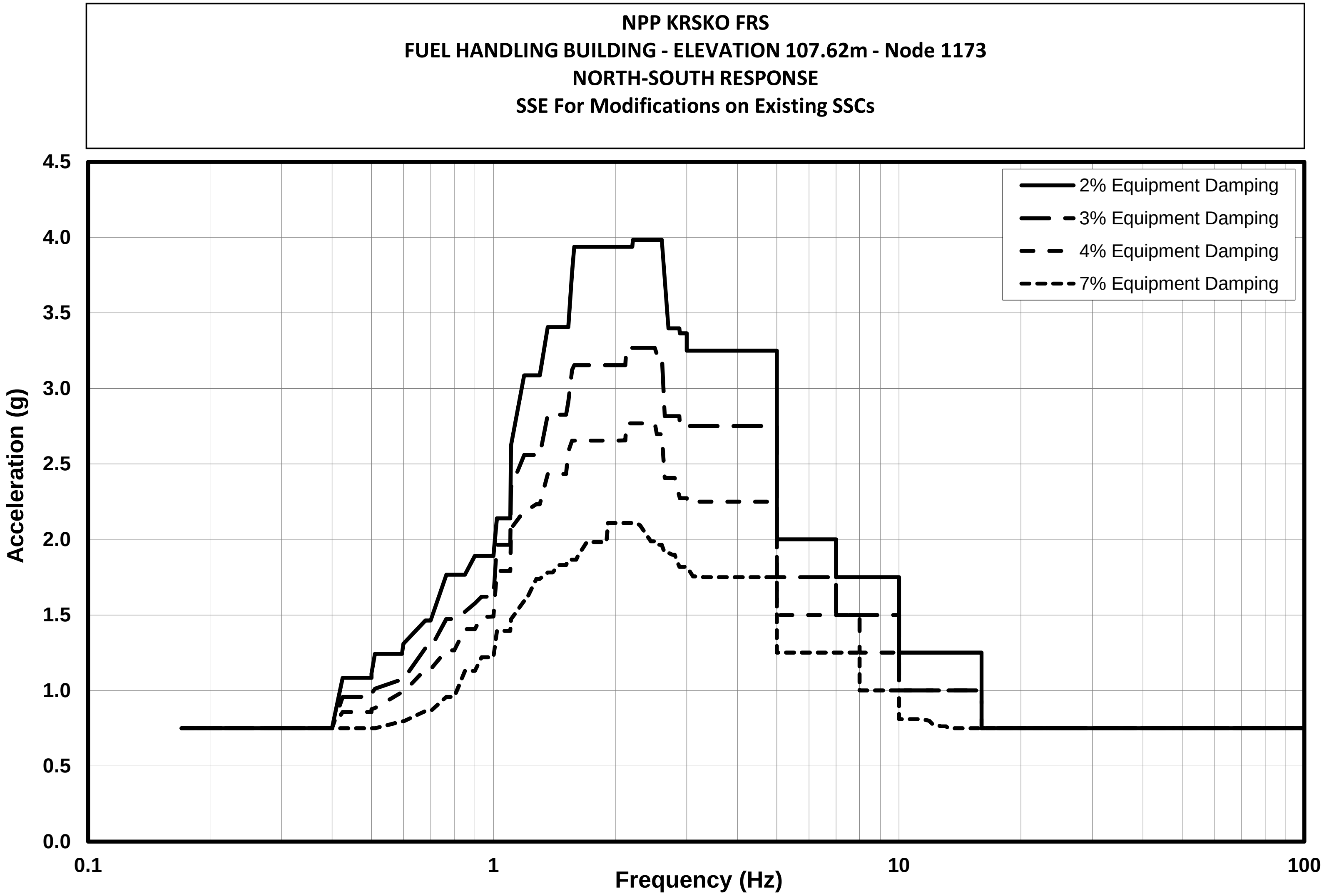

NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 107.62m - Node 1173
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B67

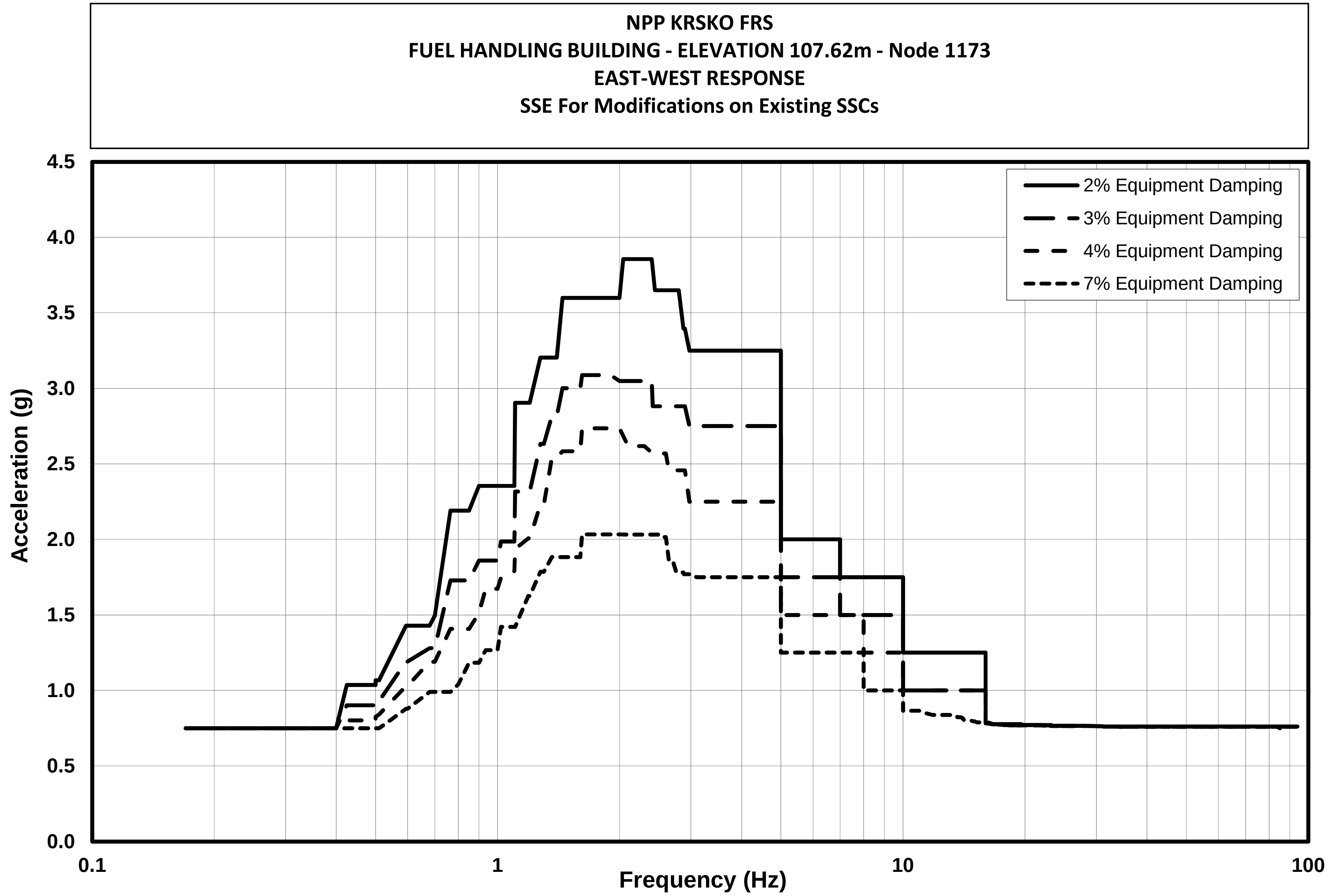
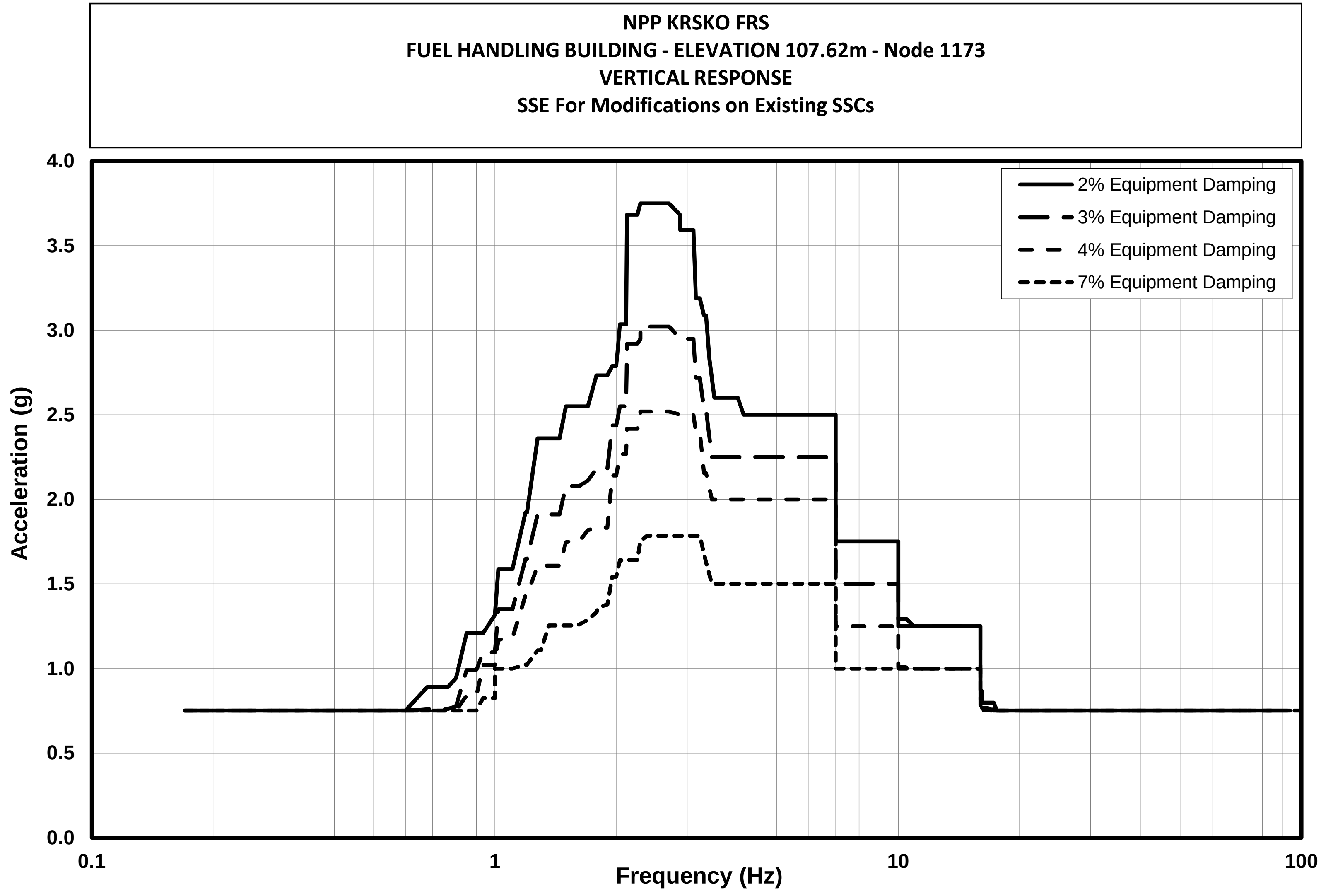
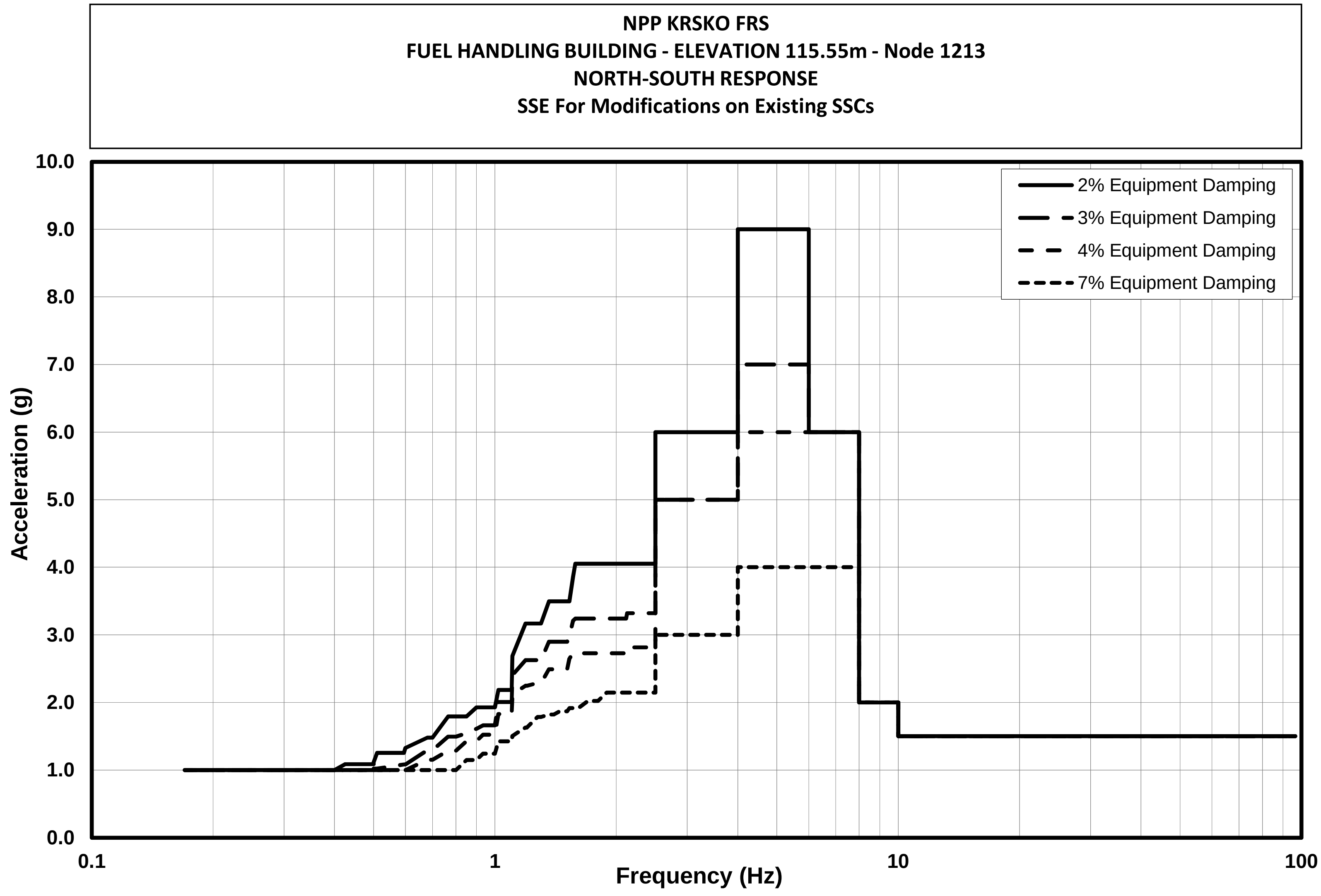
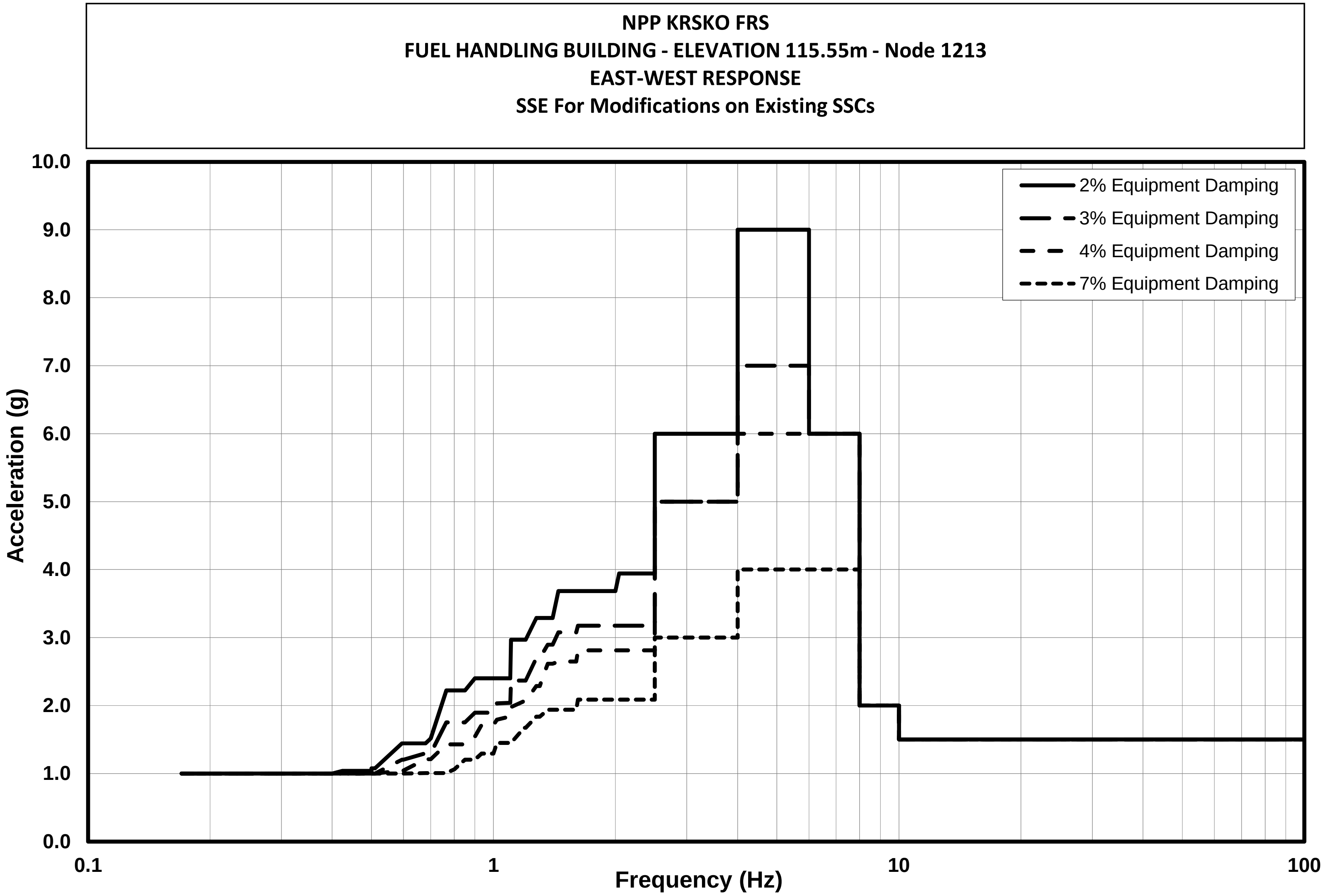

NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 107.62m - Node 1173
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

Figure B68


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 107.62m - Node 1173
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 115.55m - Node 1213
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 115.55m - Node 1213
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

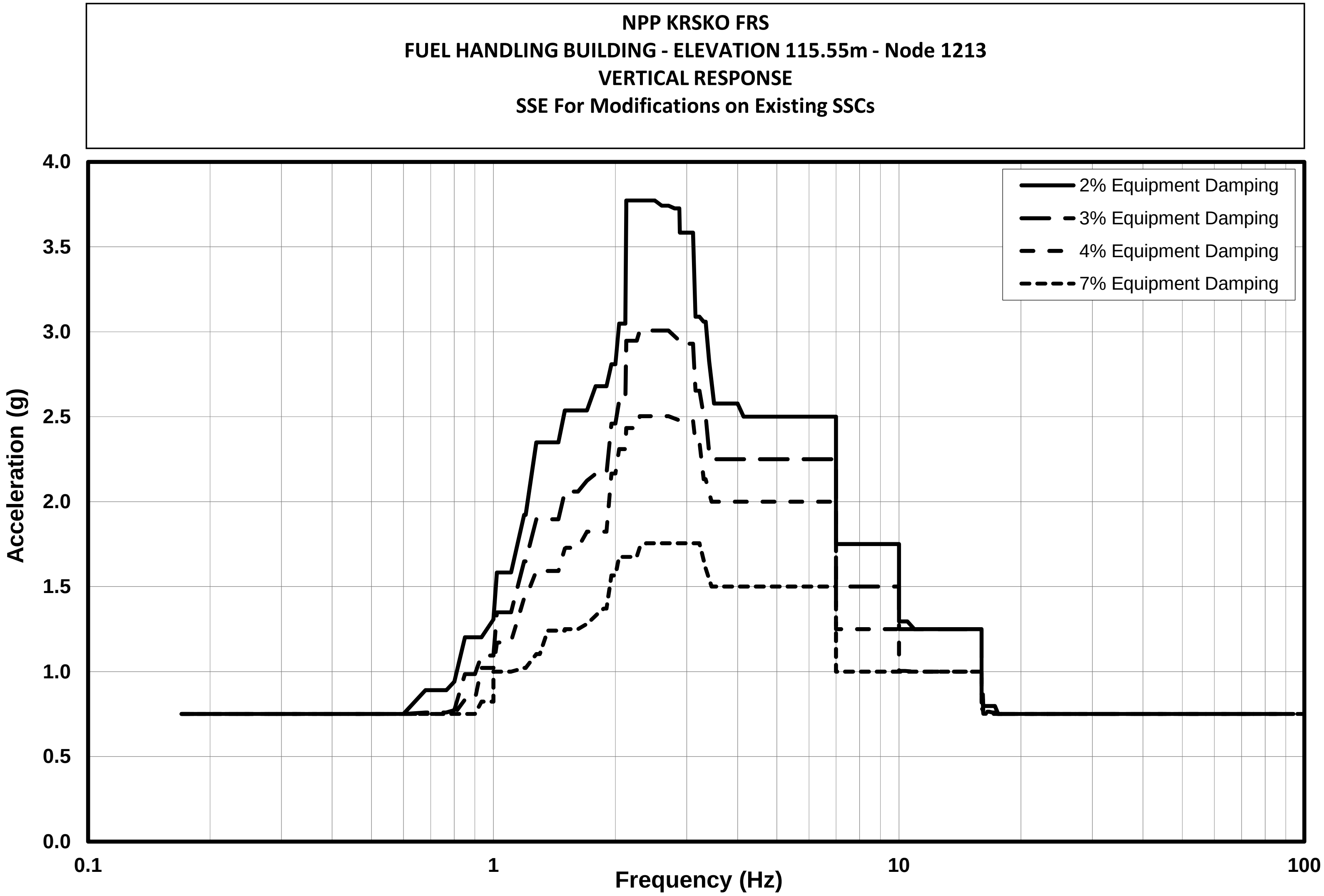
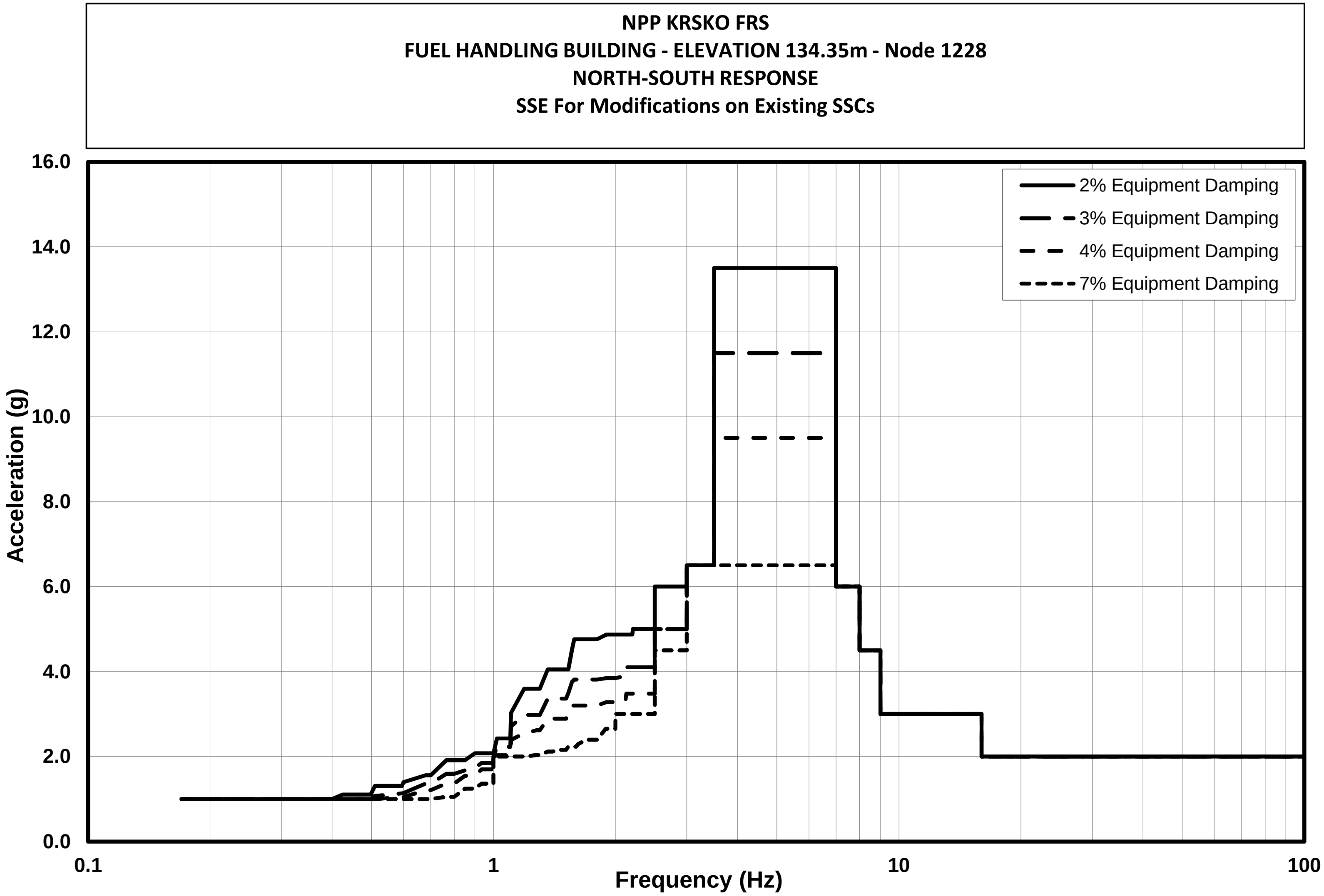
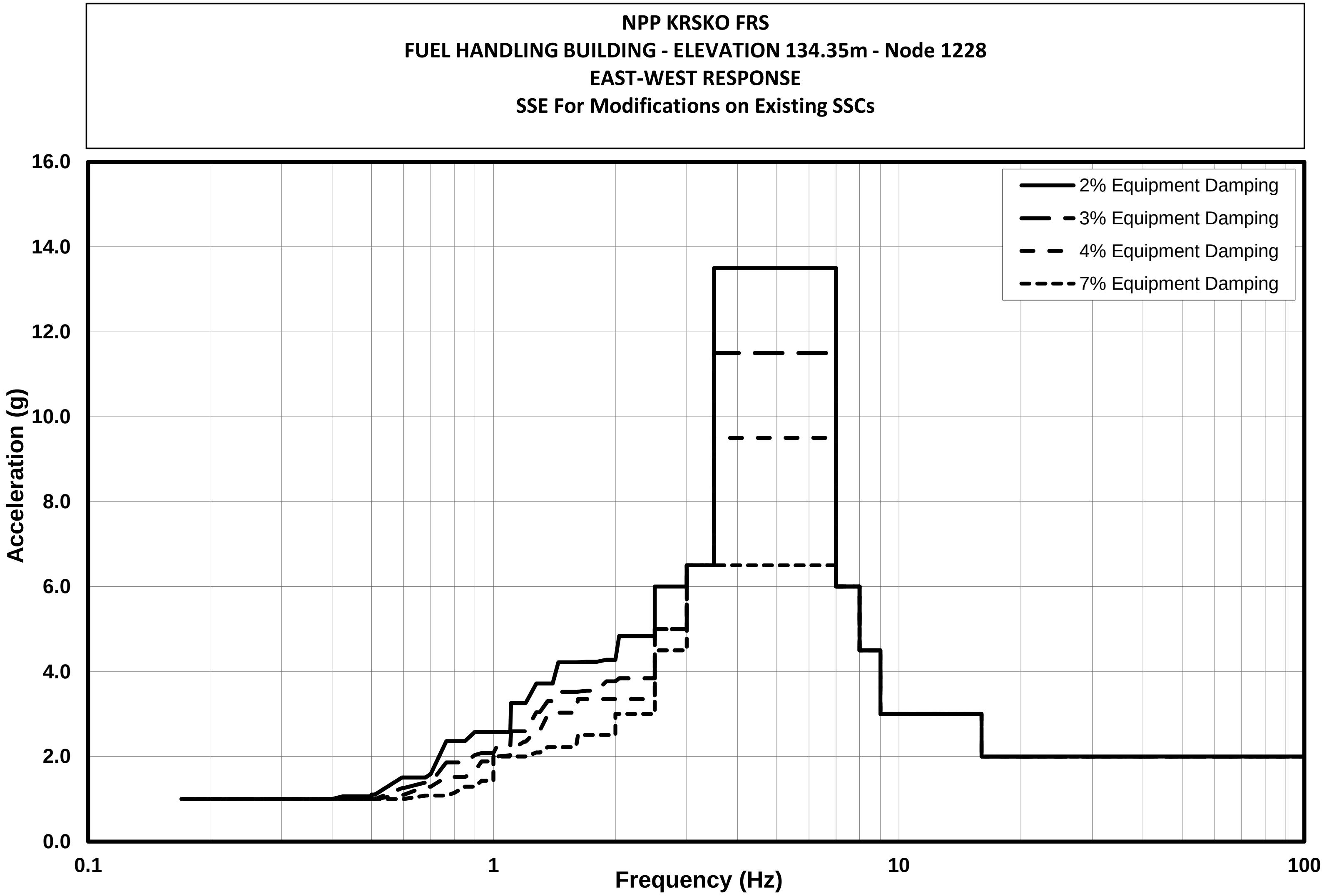

NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 115.55m - Node 1213
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B72


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 134.35m - Node 1228
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
0.1
1
10
100


NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 134.35m - Node 1228
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

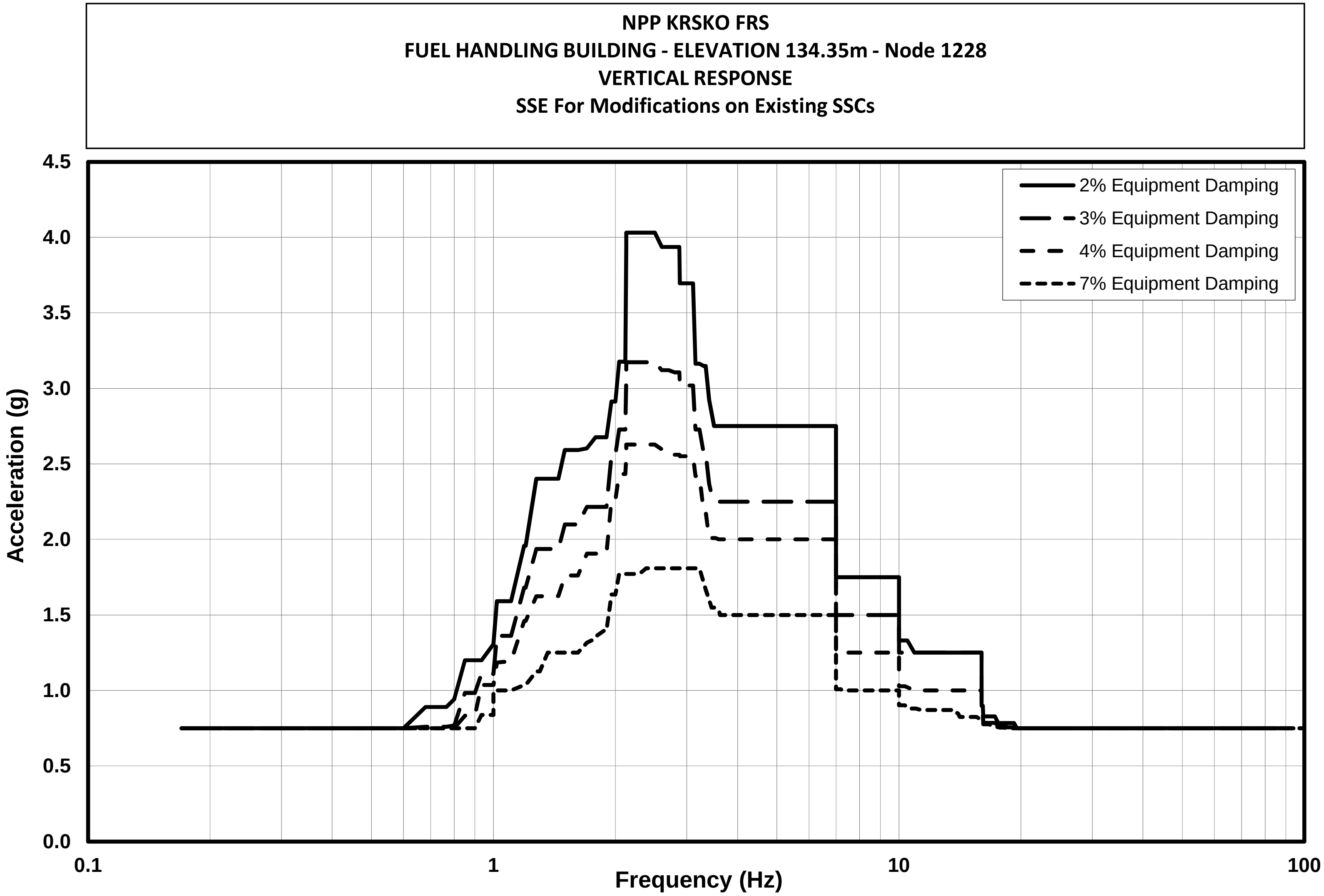

NPP KRSKO FRS
FUEL HANDLING BUILDING - ELEVATION 134.35m - Node 1228
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B75

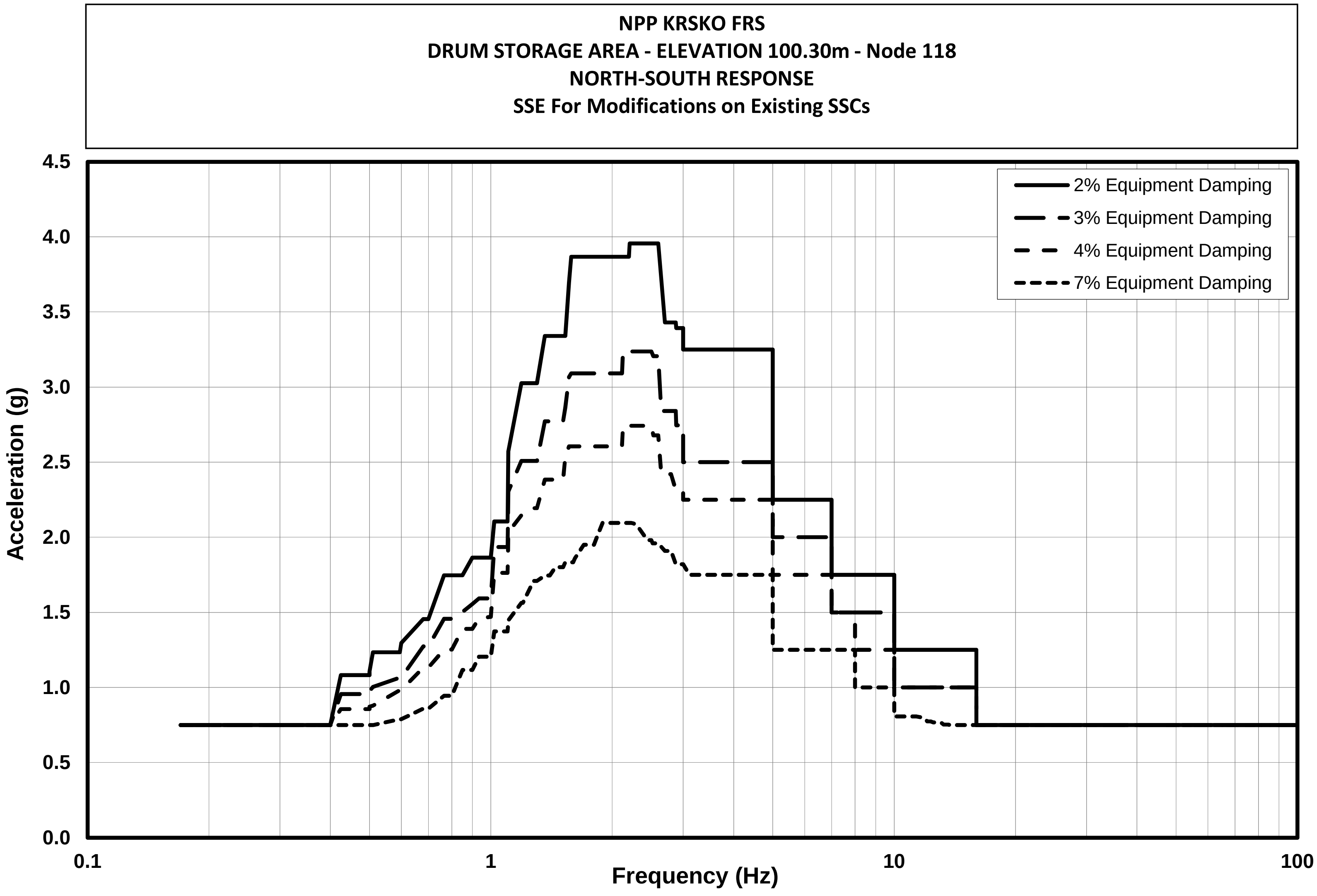
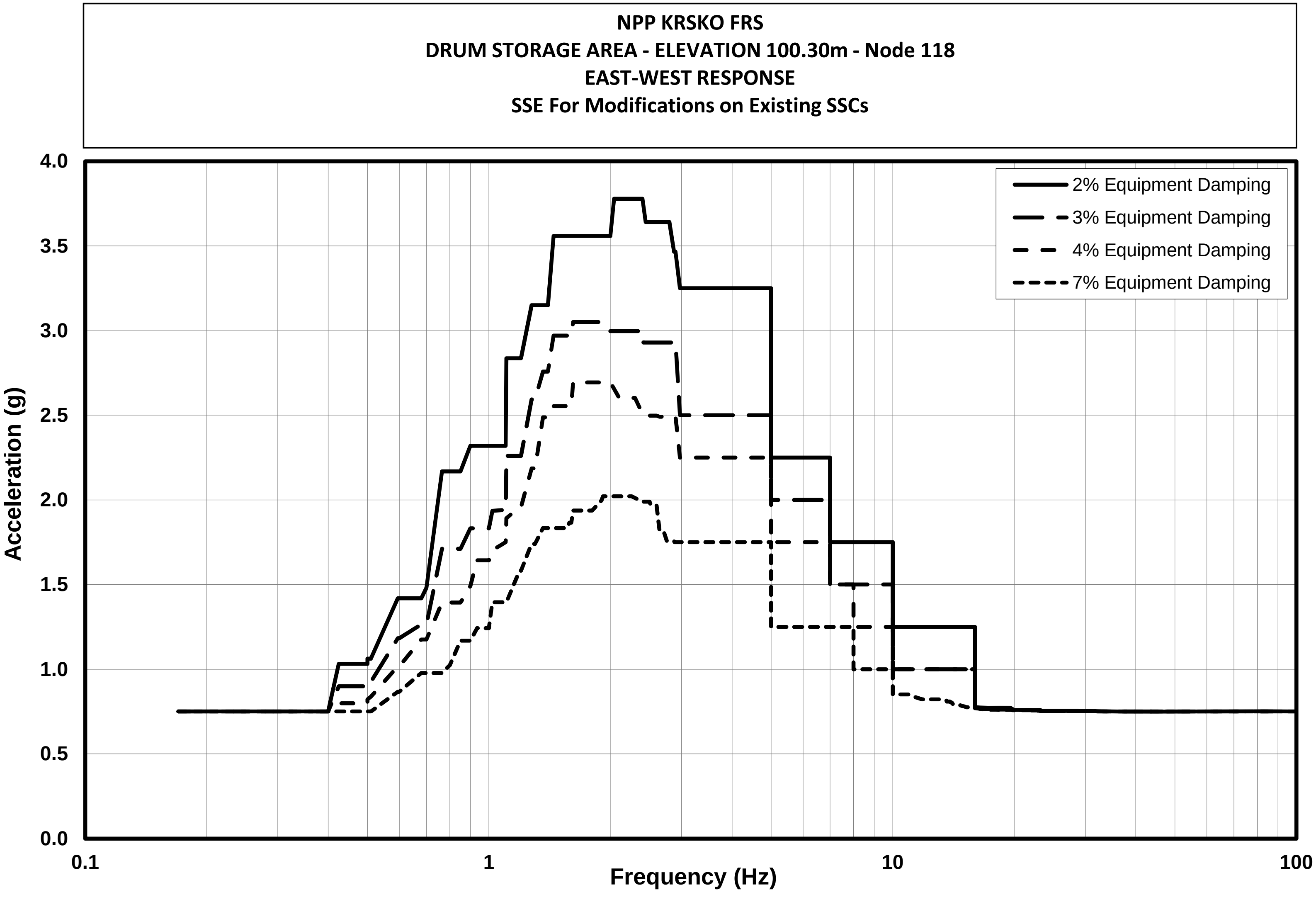
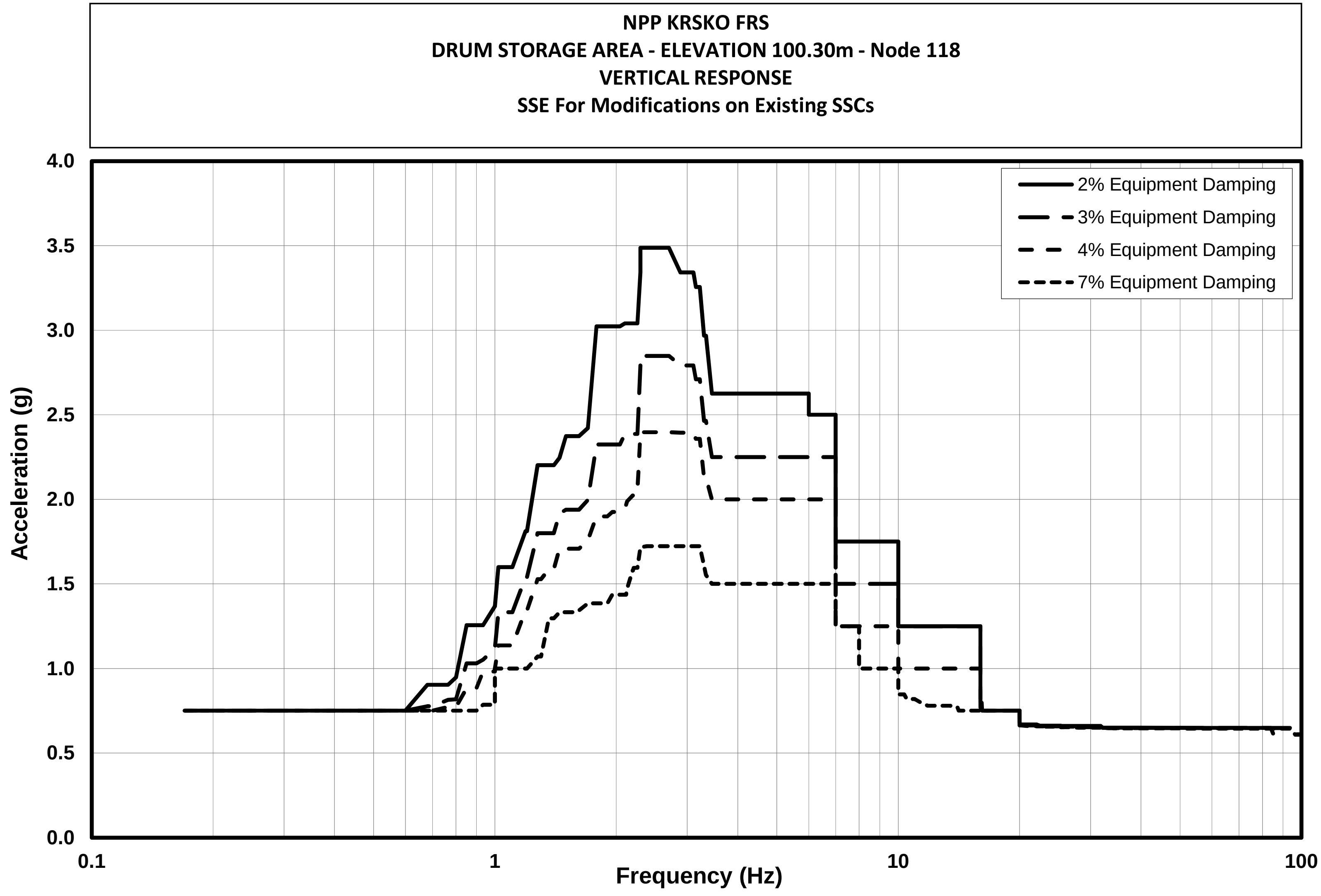

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 100.30m - Node 118
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B76


NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 100.30m - Node 118
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 100.30m - Node 118
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

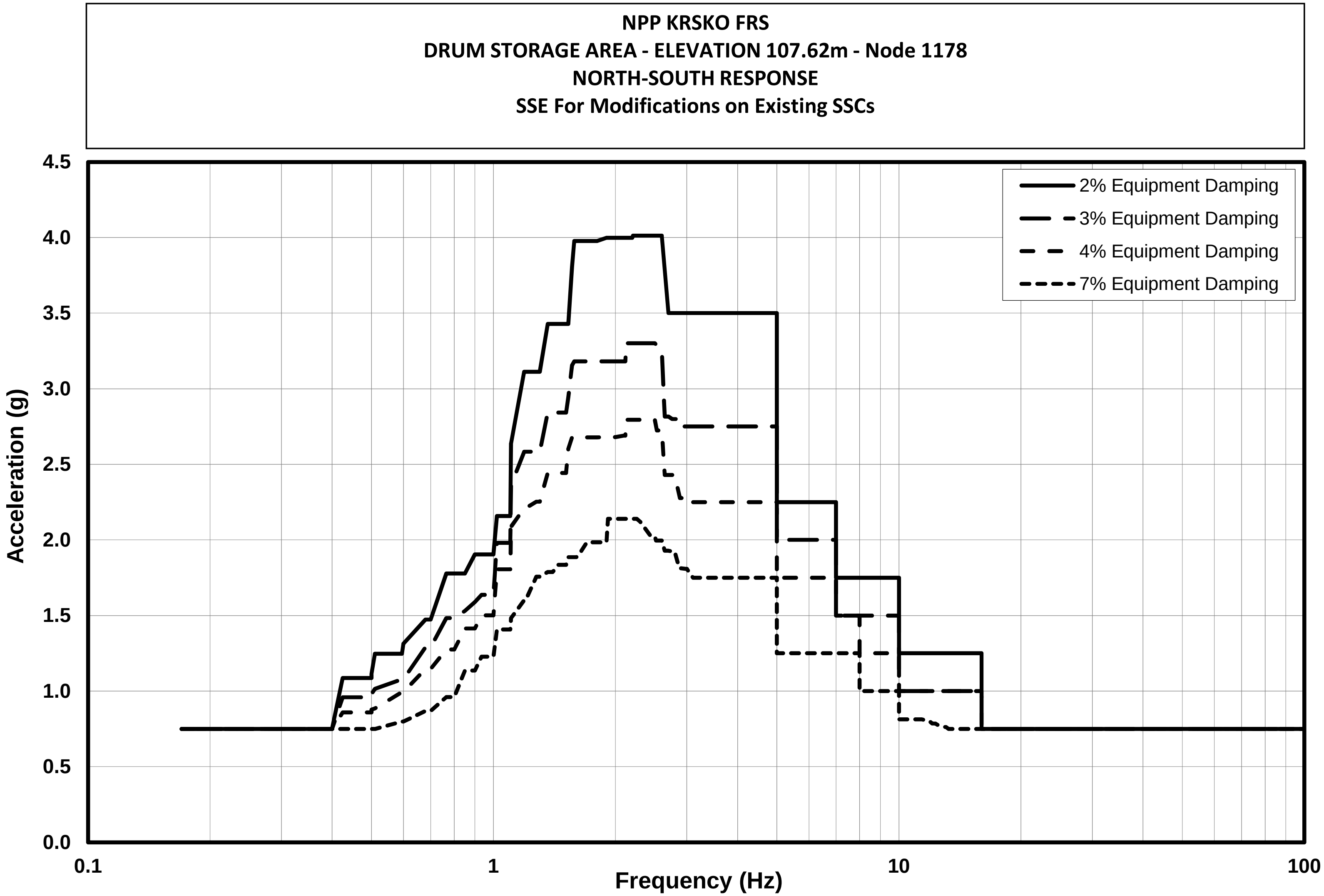
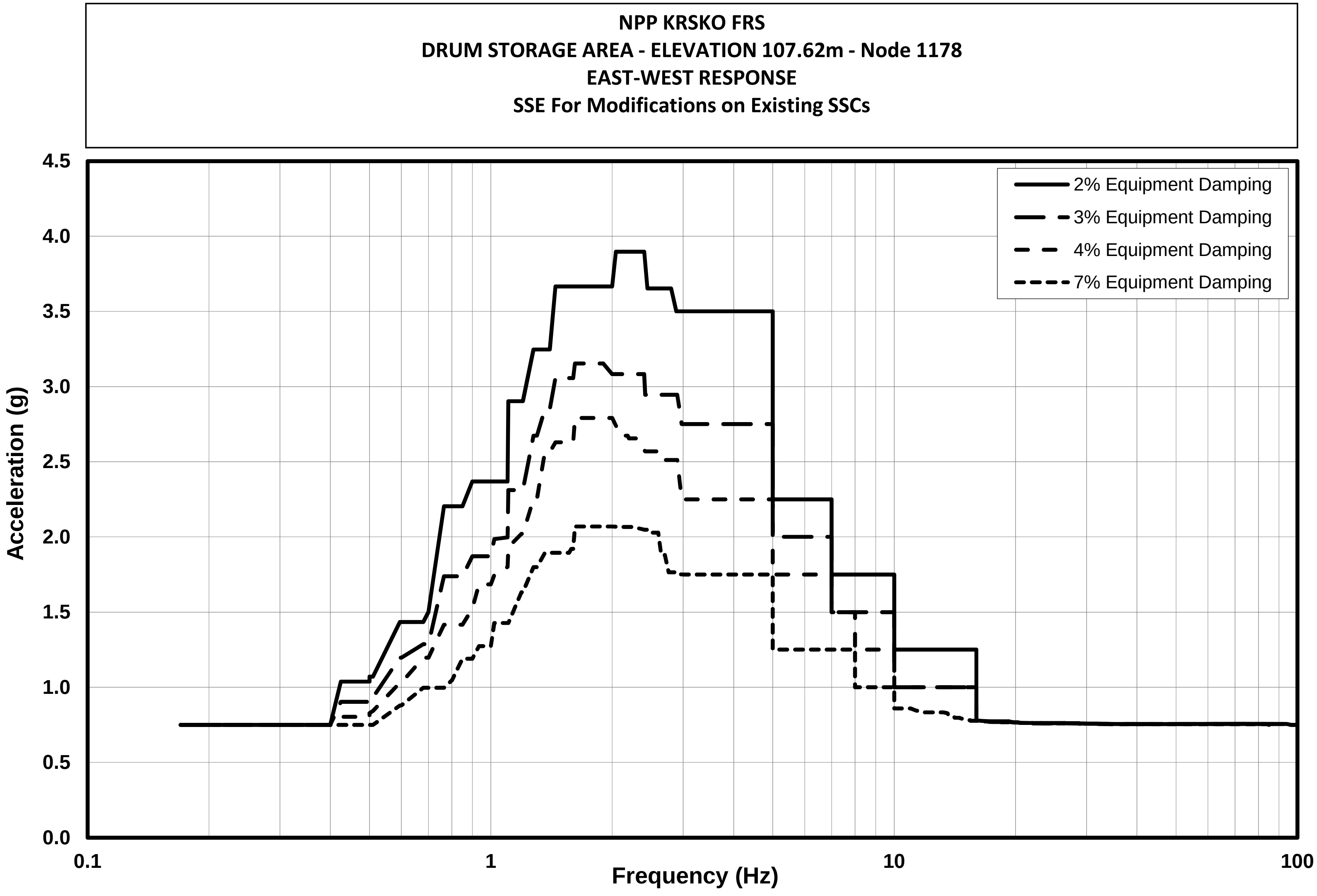
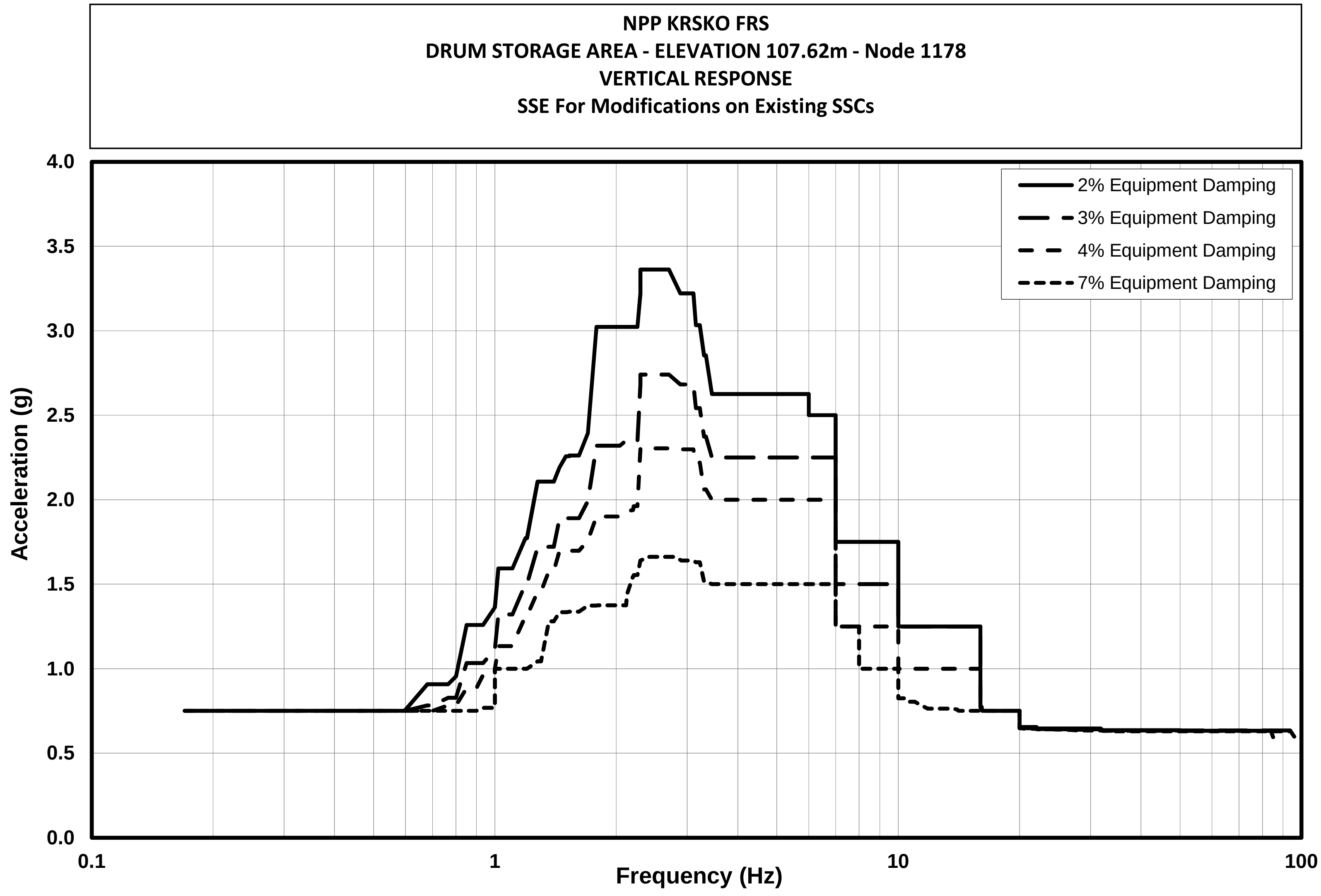
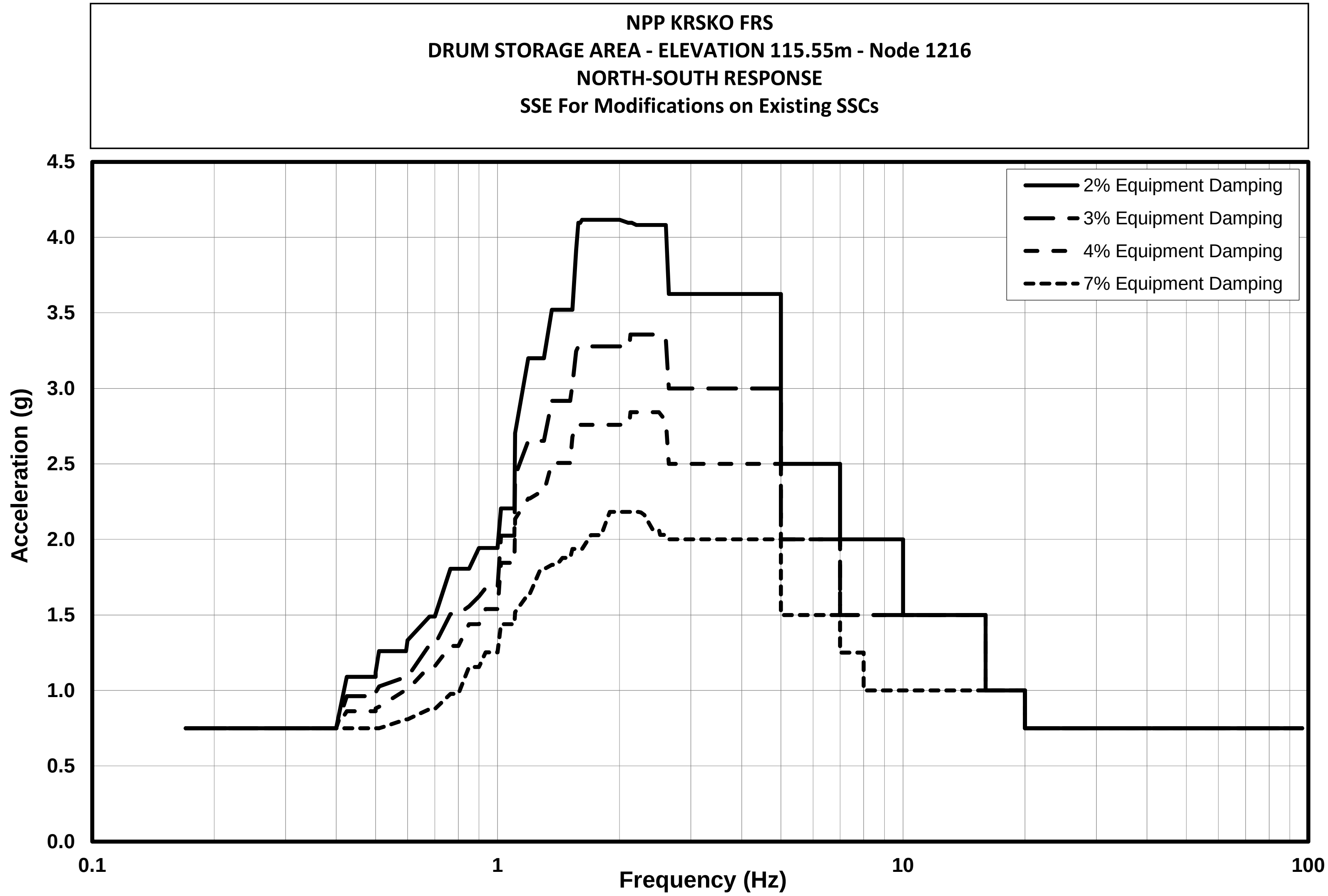
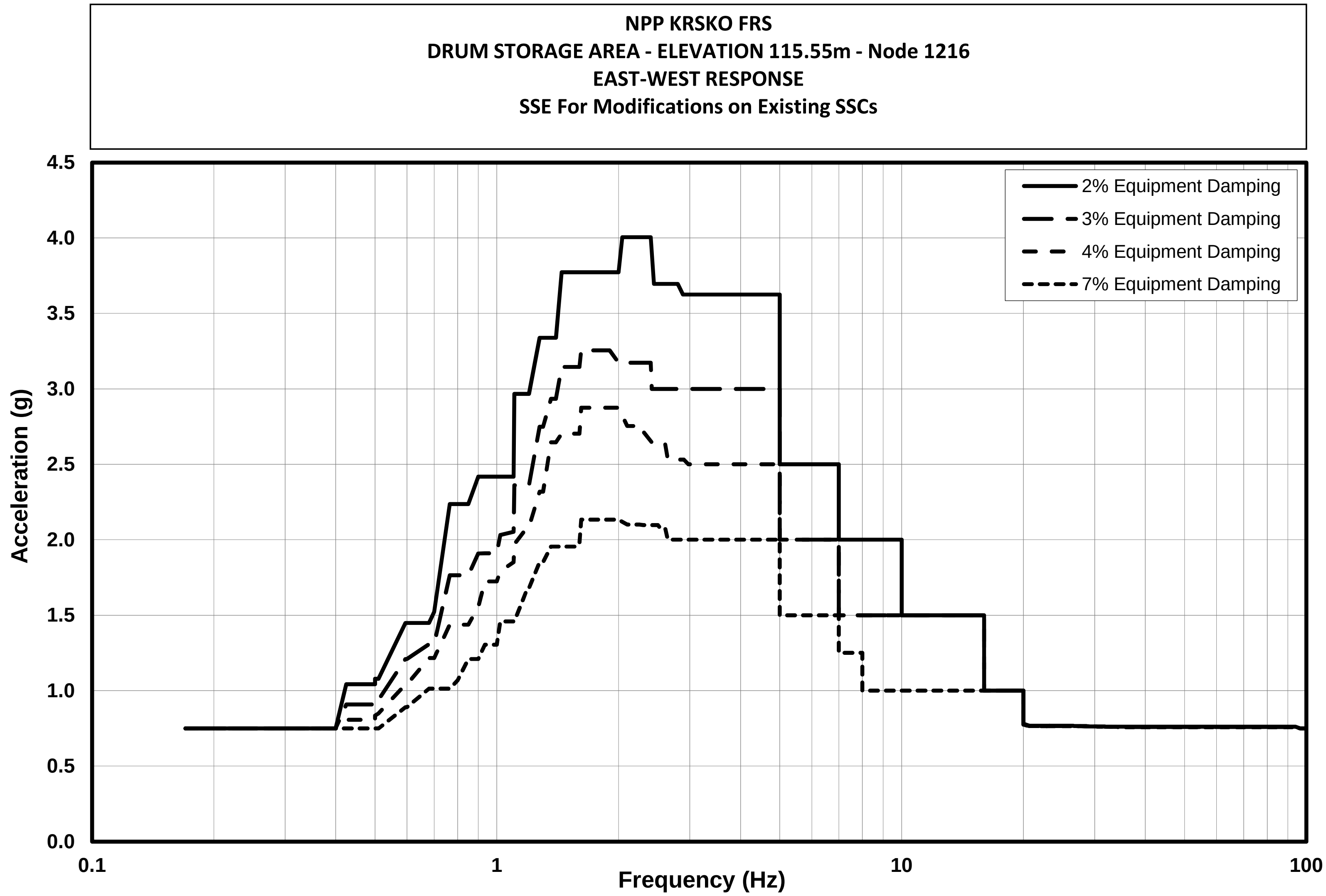

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 107.62m - Node 1178
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

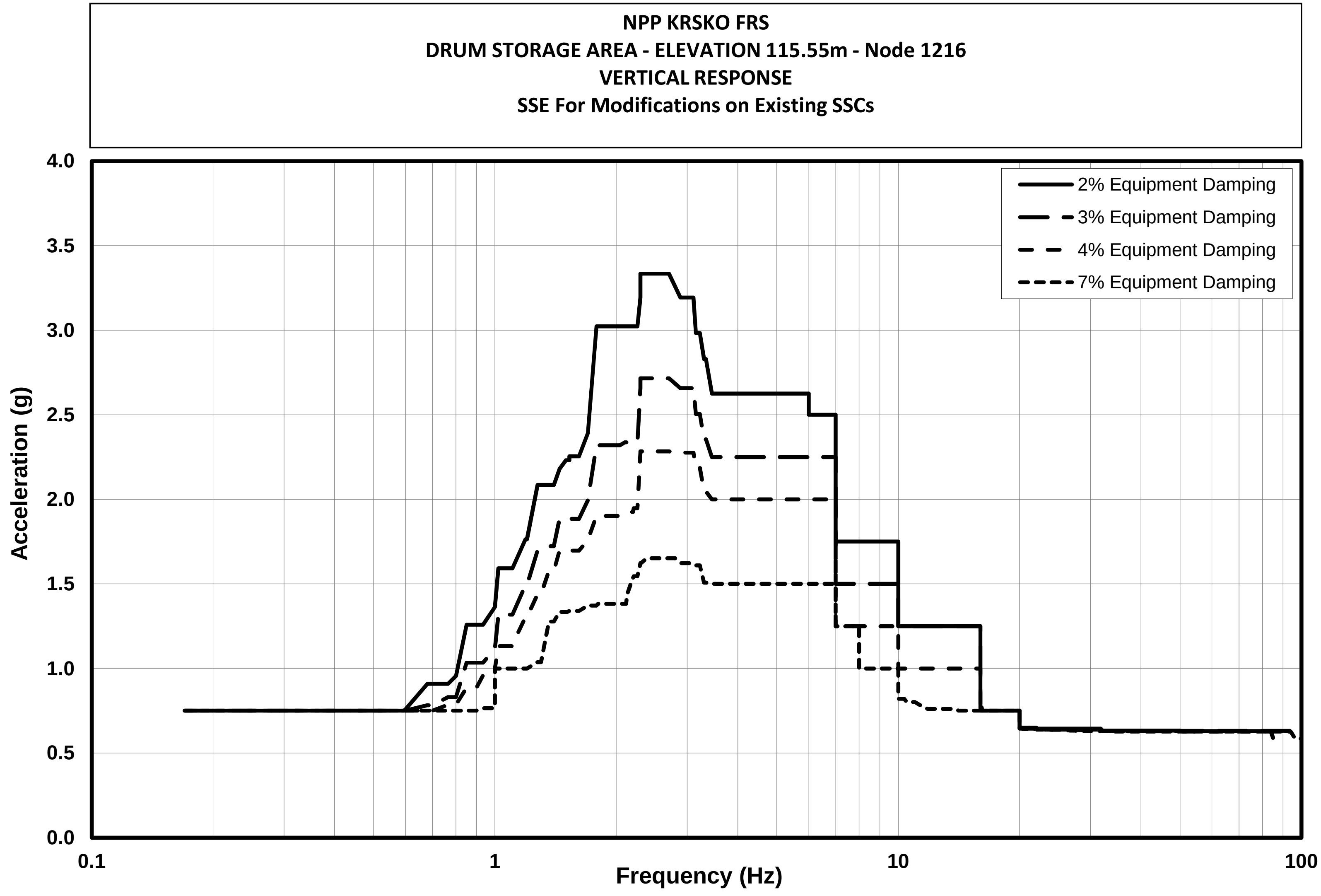
Figure B79


NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 107.62m - Node 1178
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

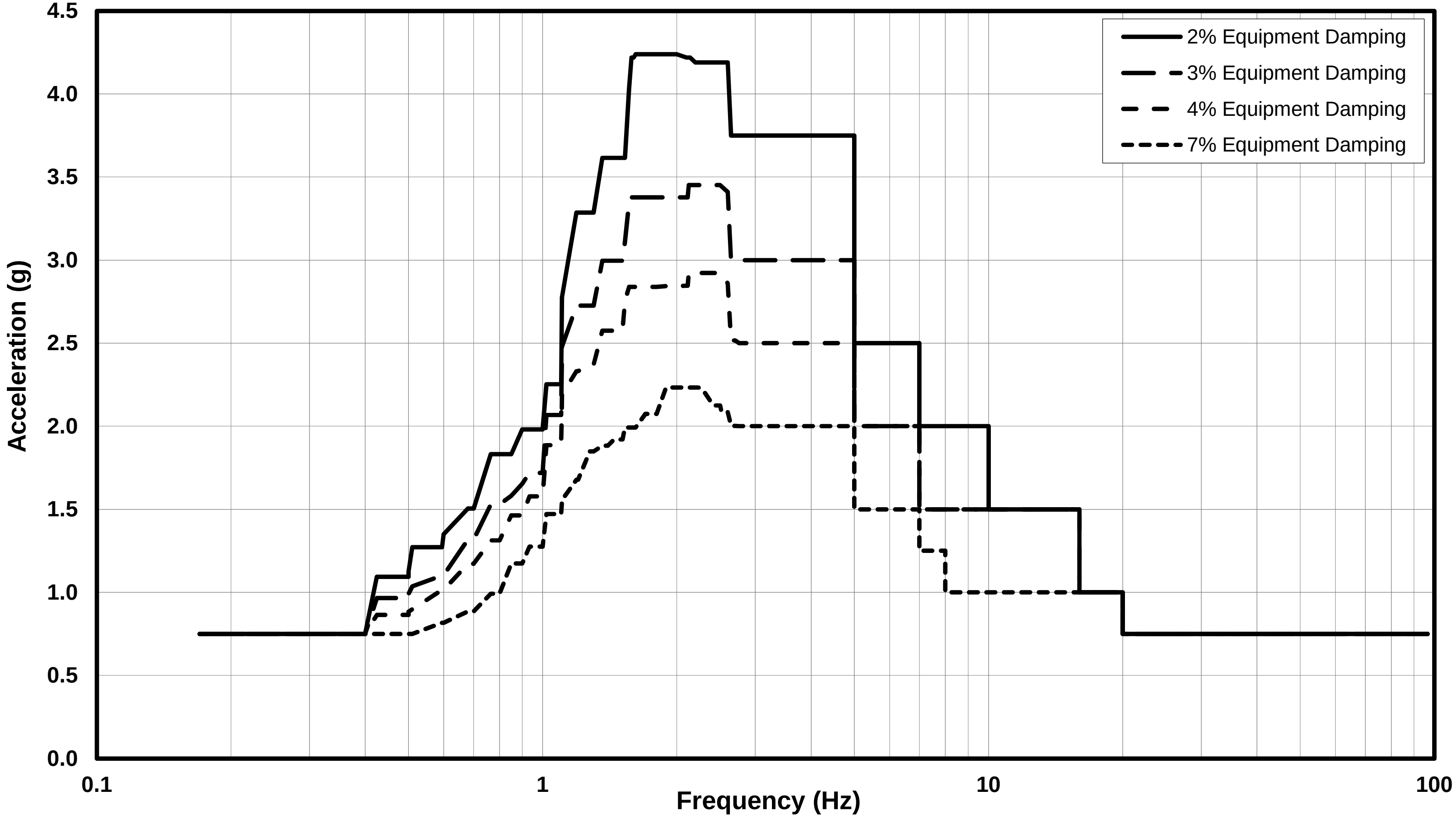

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 107.62m - Node 1178
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

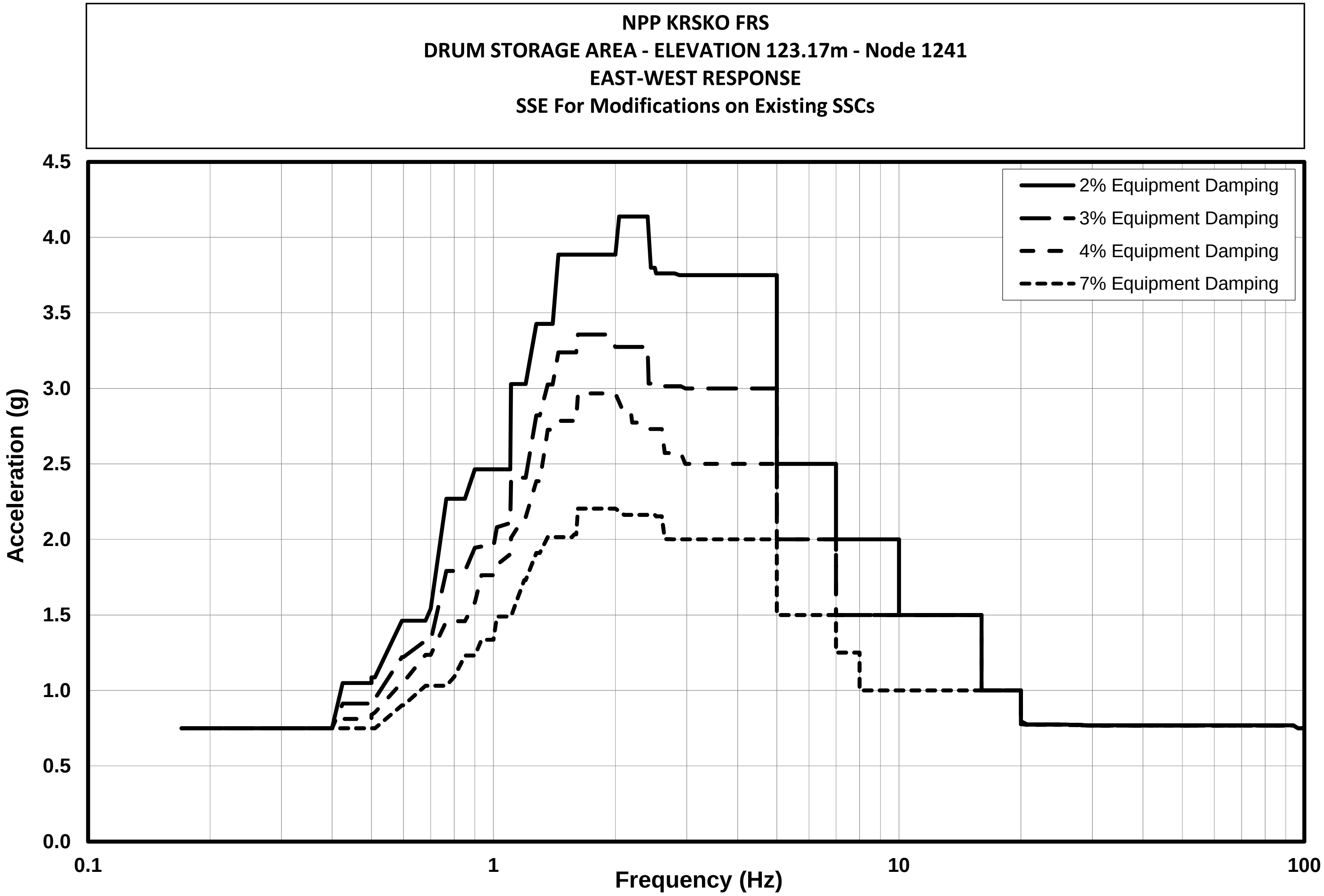

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 115.55m - Node 1216
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100

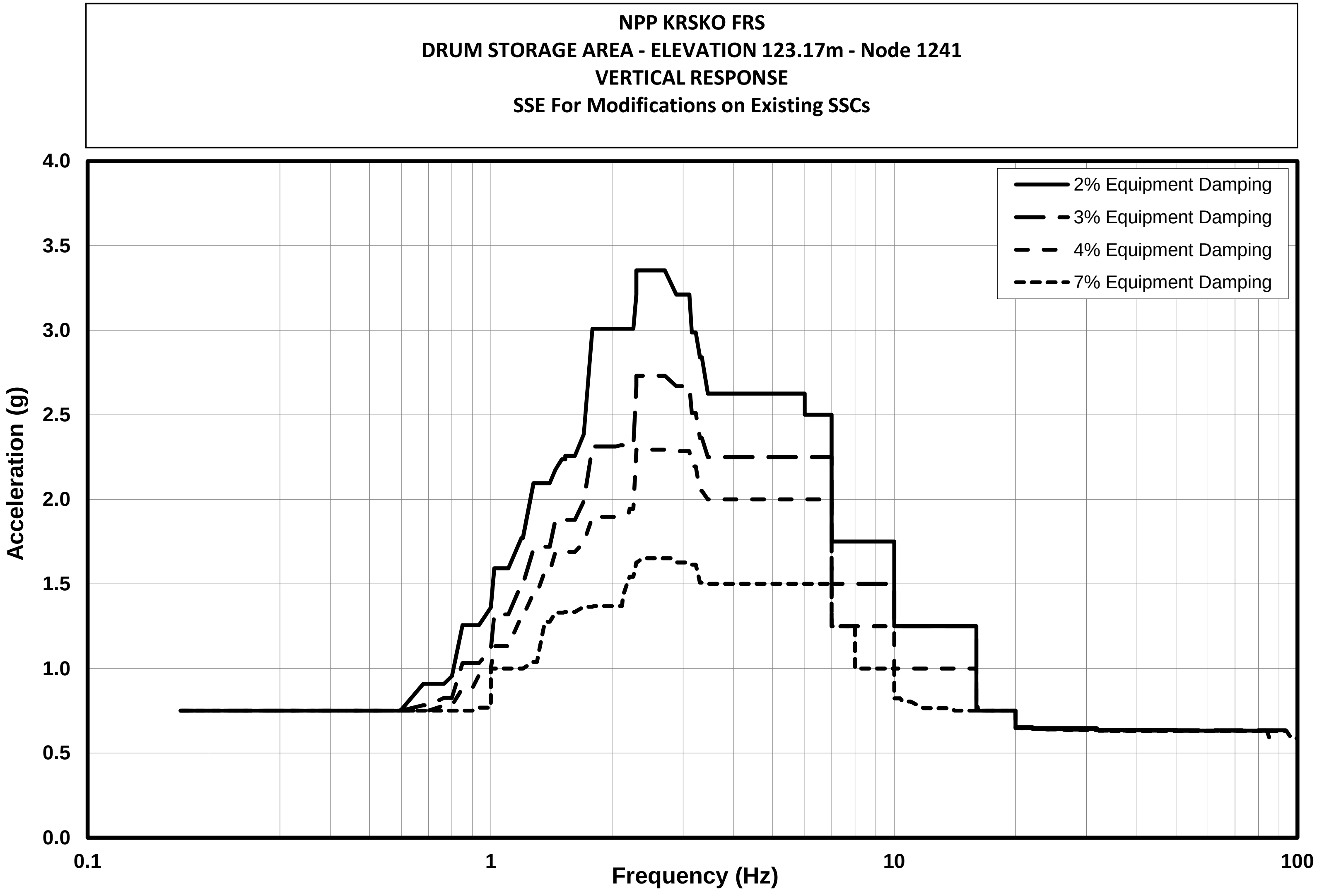

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 115.55m - Node 1216
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

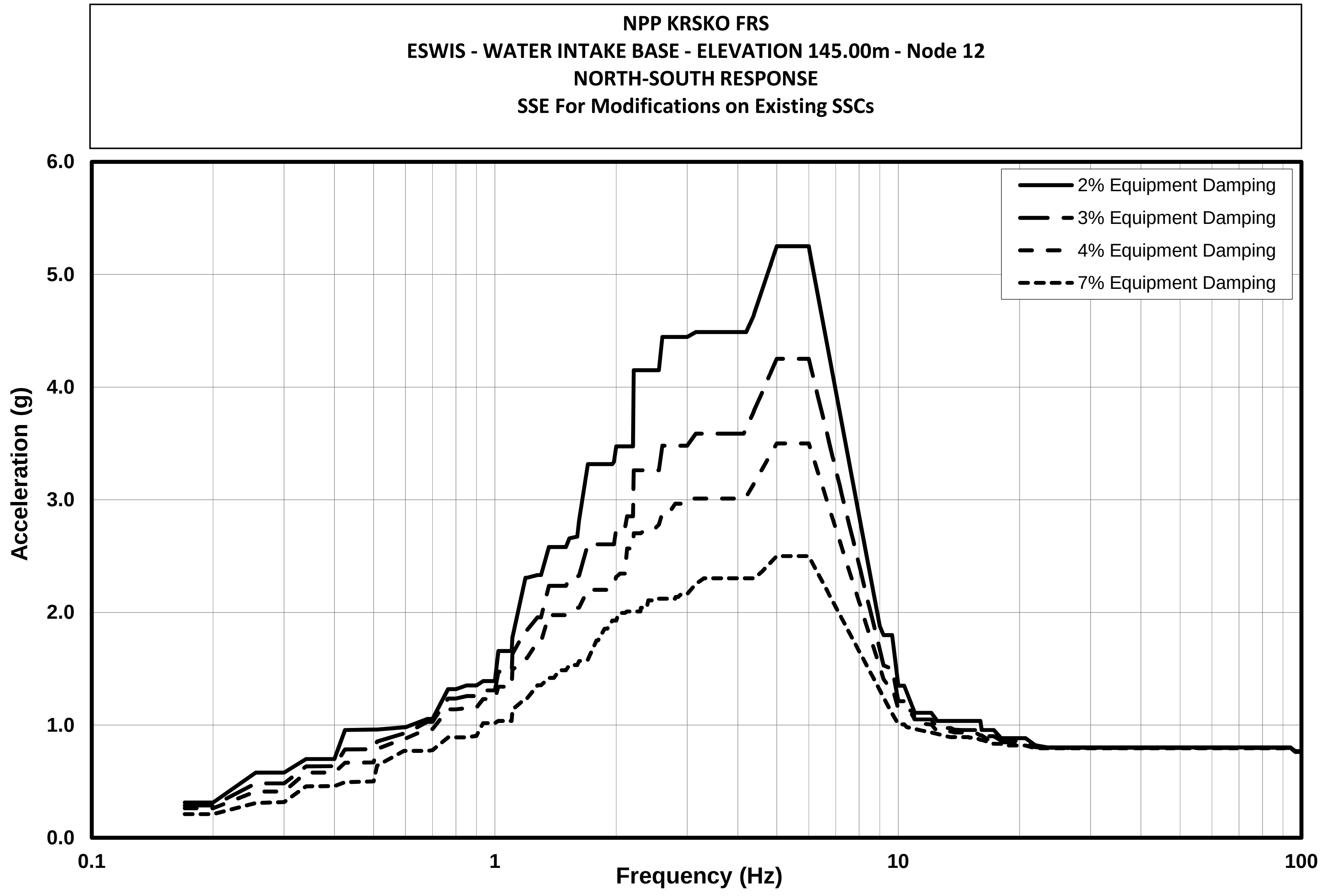

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 115.55m - Node 1216
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 123.17m - Node 1241
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs




NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 123.17m - Node 1241
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)


NPP KRSKO FRS
DRUM STORAGE AREA - ELEVATION 123.17m - Node 1241
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
ESWIS - WATER INTAKE BASE - ELEVATION 145.00m - Node 12
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
Frequency (Hz)
0.1
1
10
100

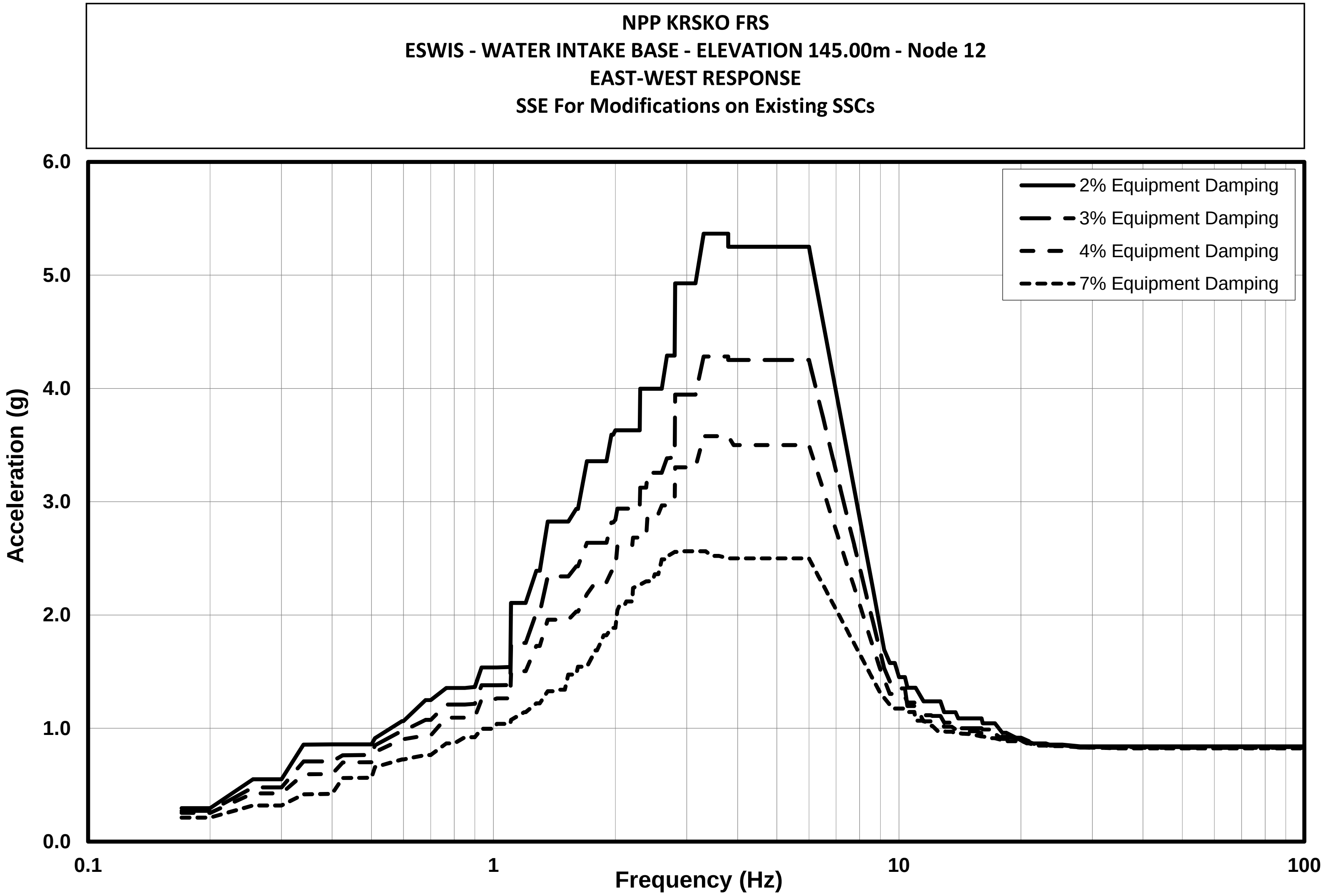
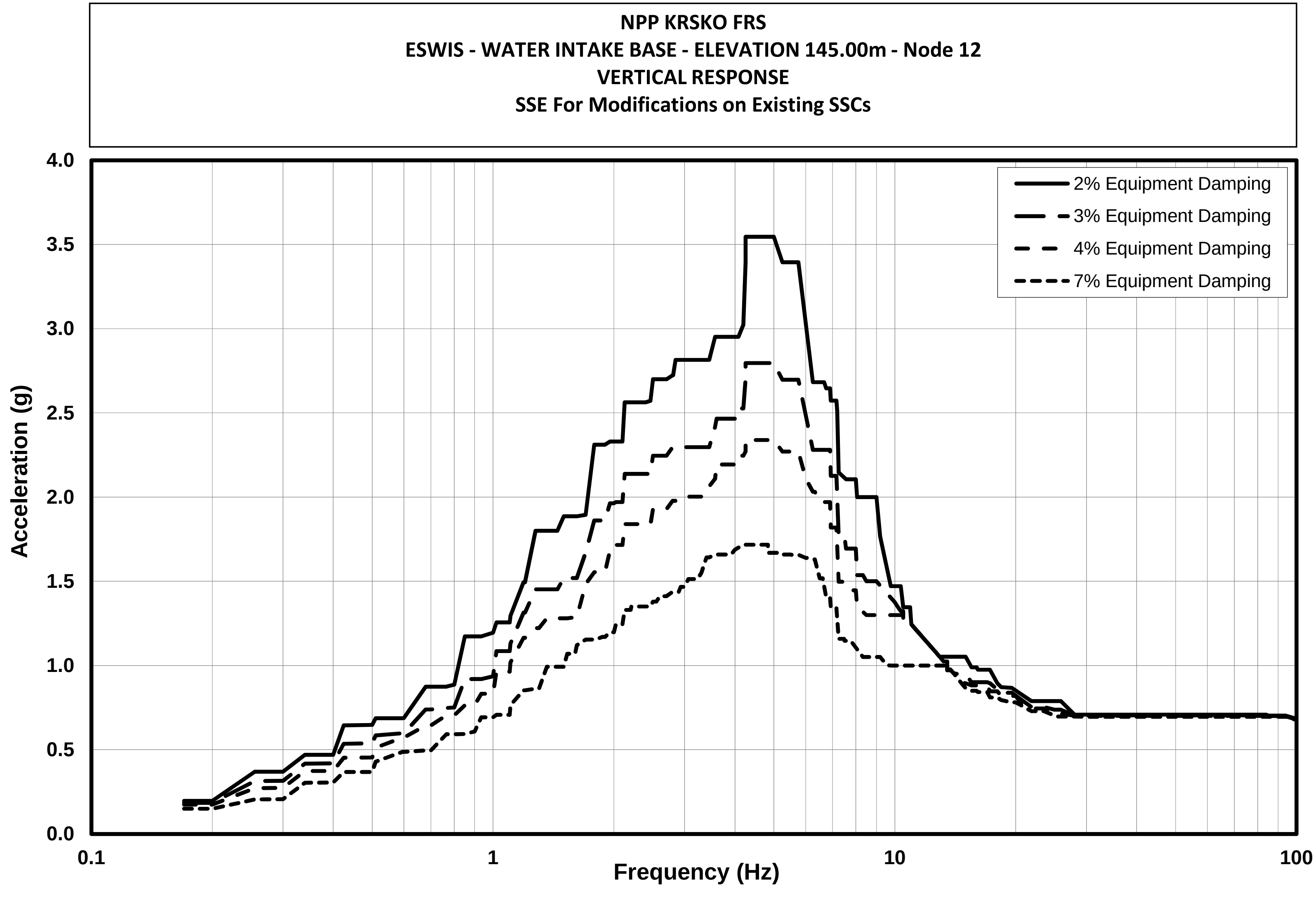
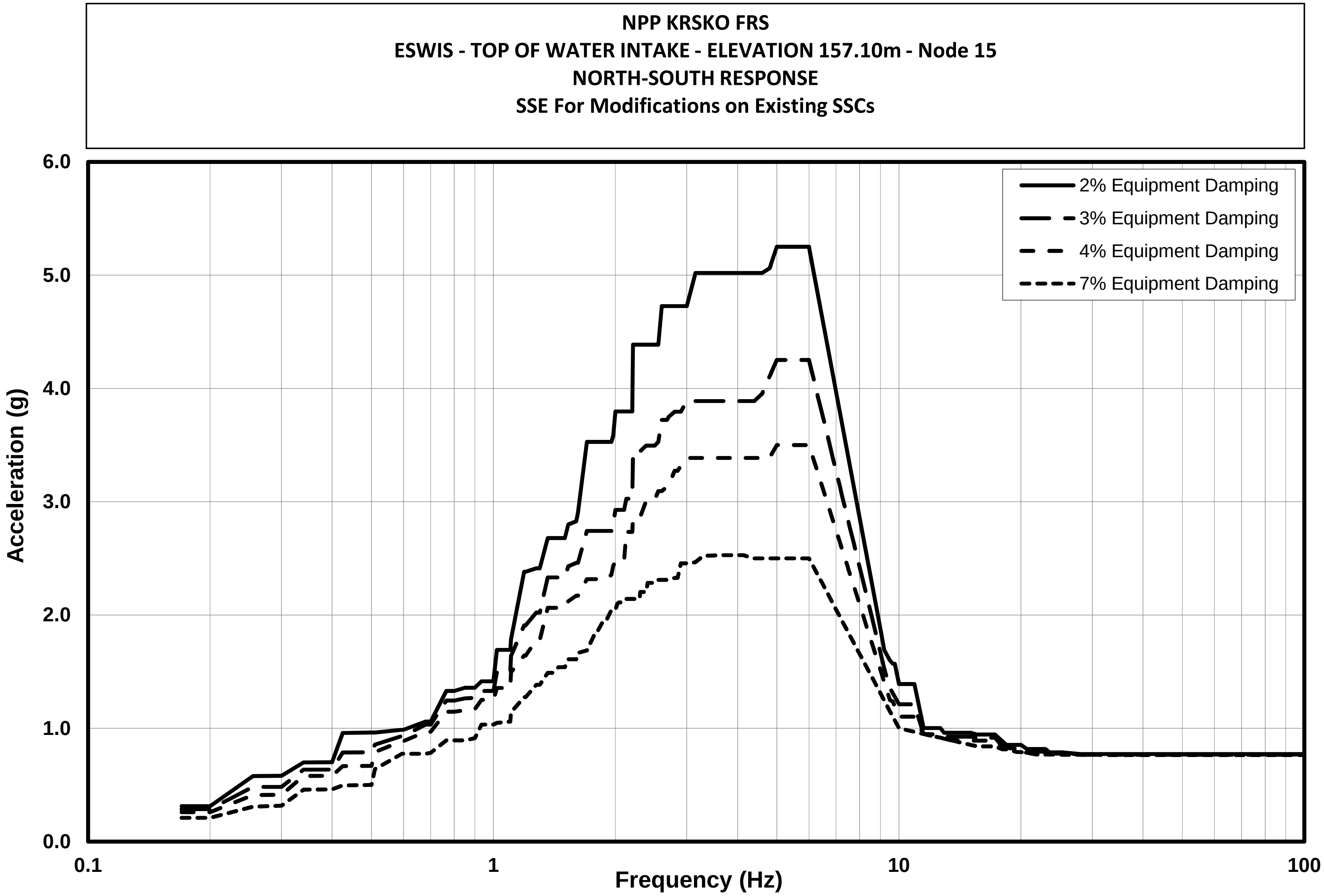
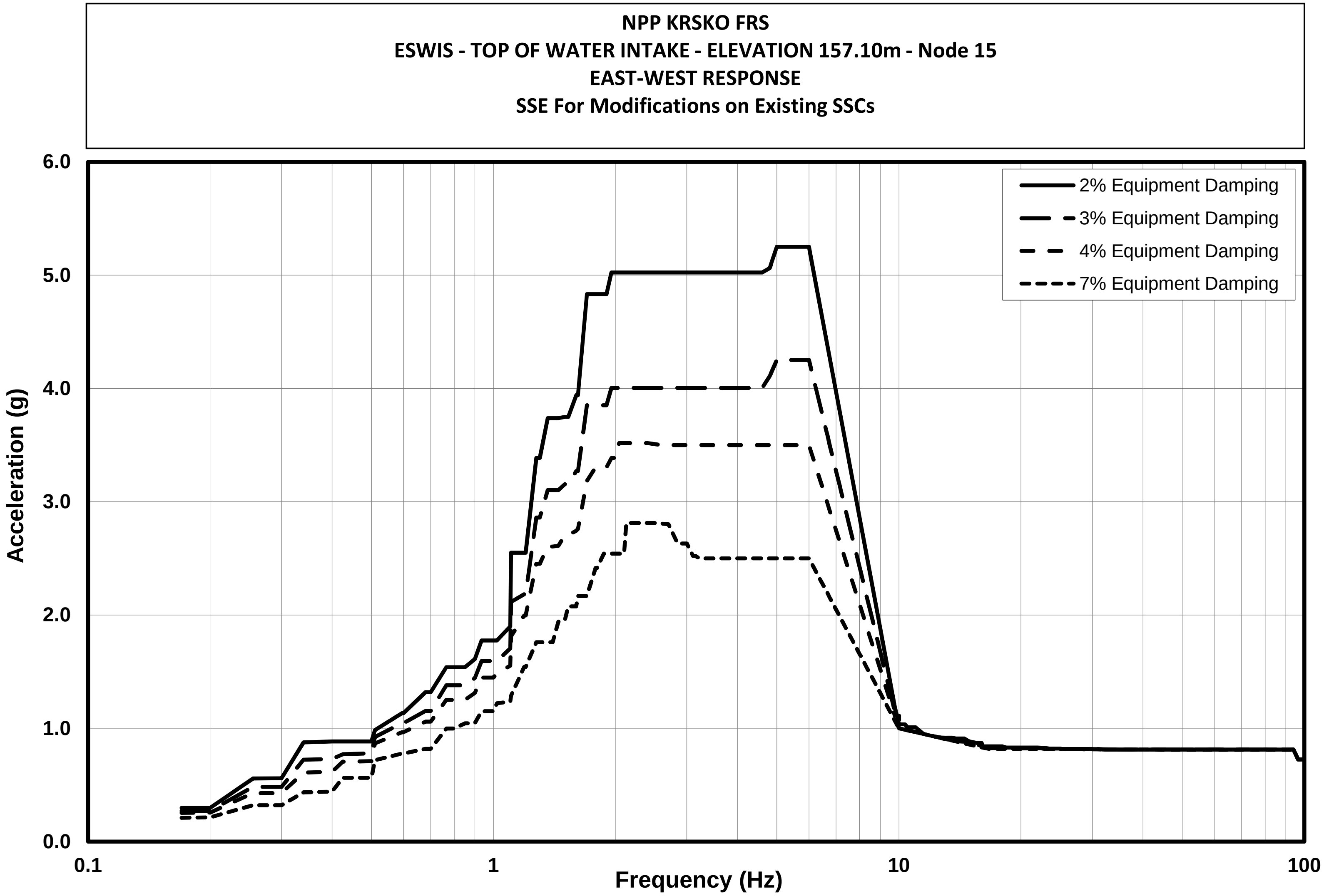

NPP KRSKO FRS
ESWIS - WATER INTAKE BASE - ELEVATION 145.00m - Node 12
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B89


NPP KRSKO FRS
ESWIS - WATER INTAKE BASE - ELEVATION 145.00m - Node 12
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


NPP KRSKO FRS
ESWIS - TOP OF WATER INTAKE - ELEVATION 157.10m - Node 15
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
ESWIS - TOP OF WATER INTAKE - ELEVATION 157.10m - Node 15
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

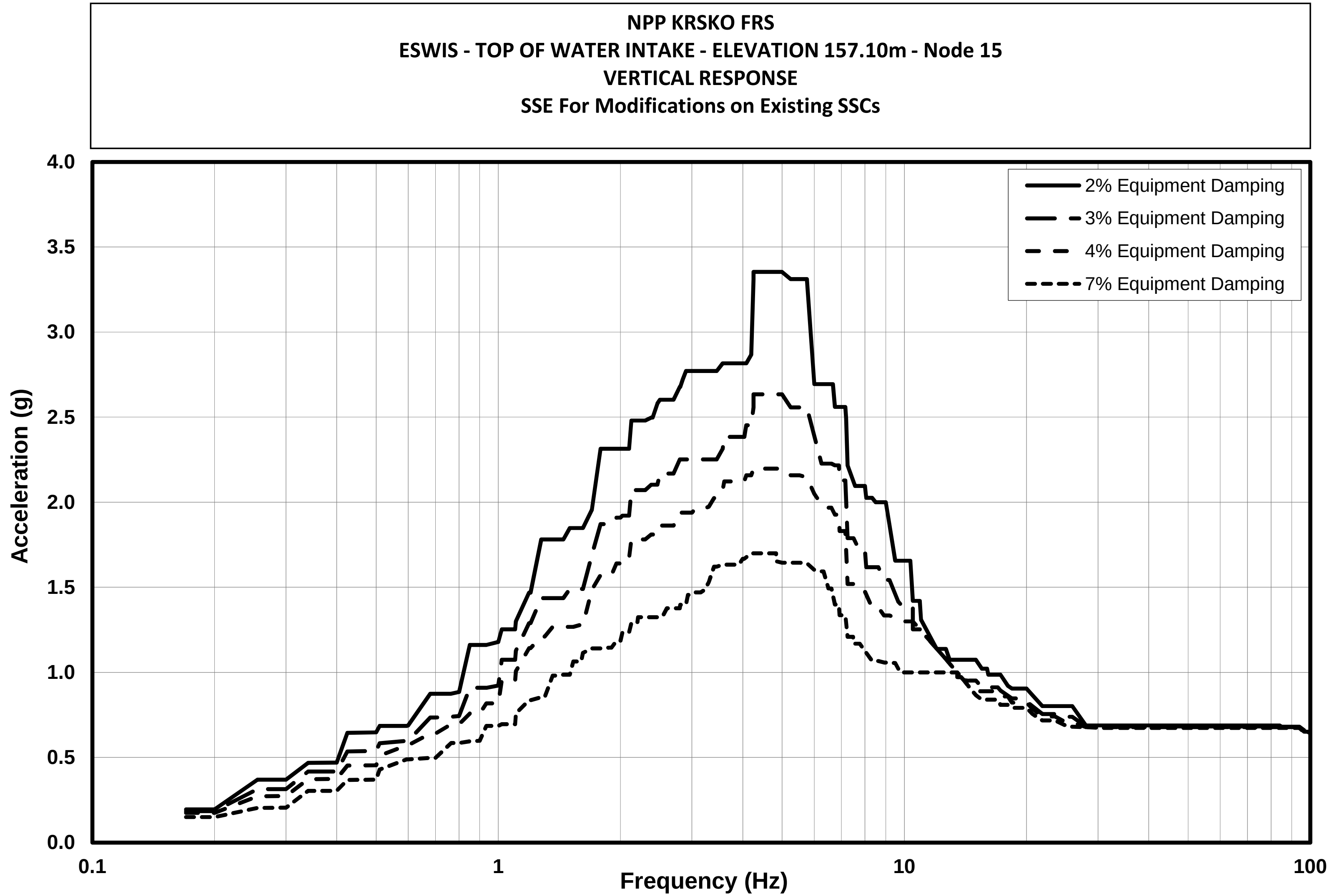
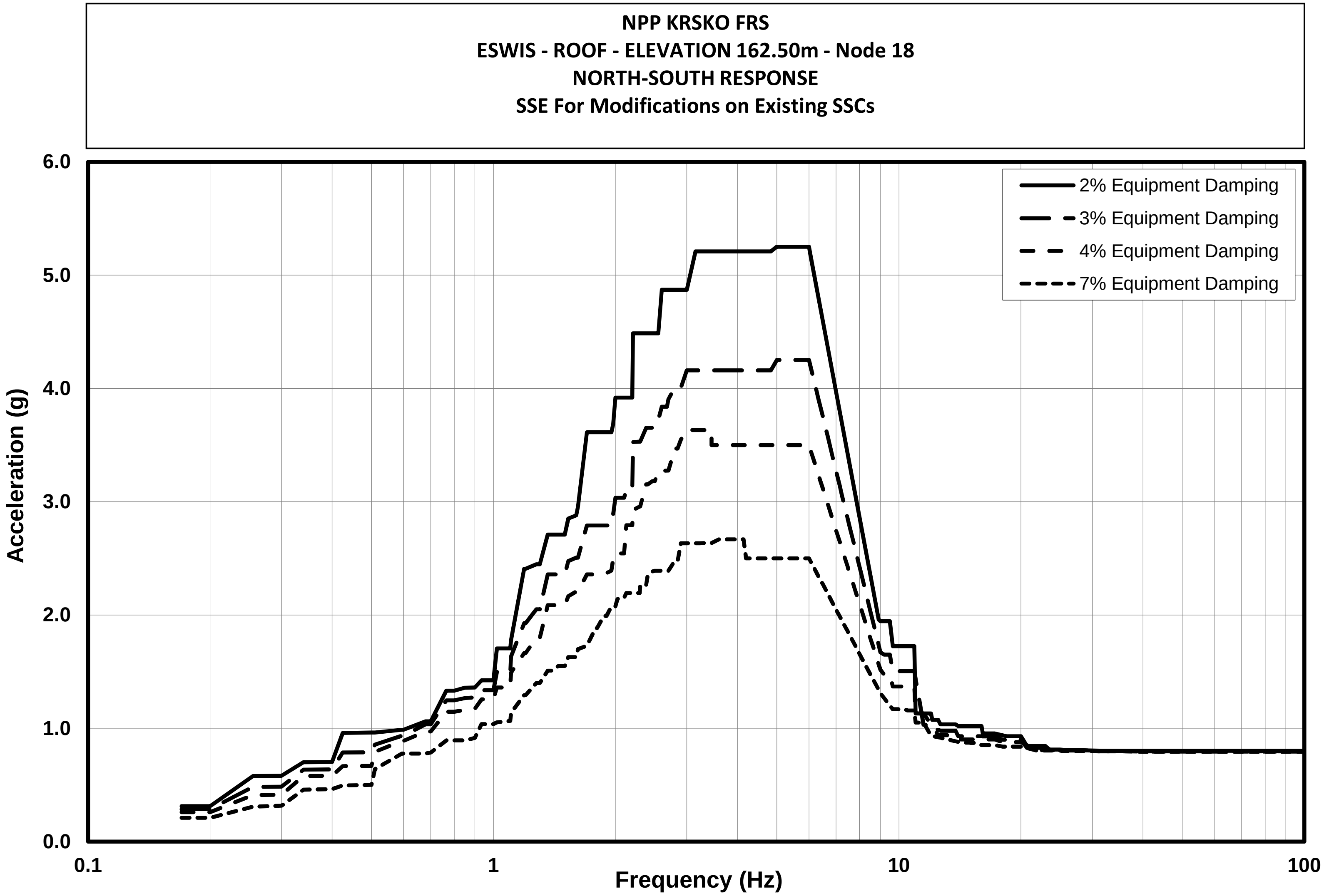
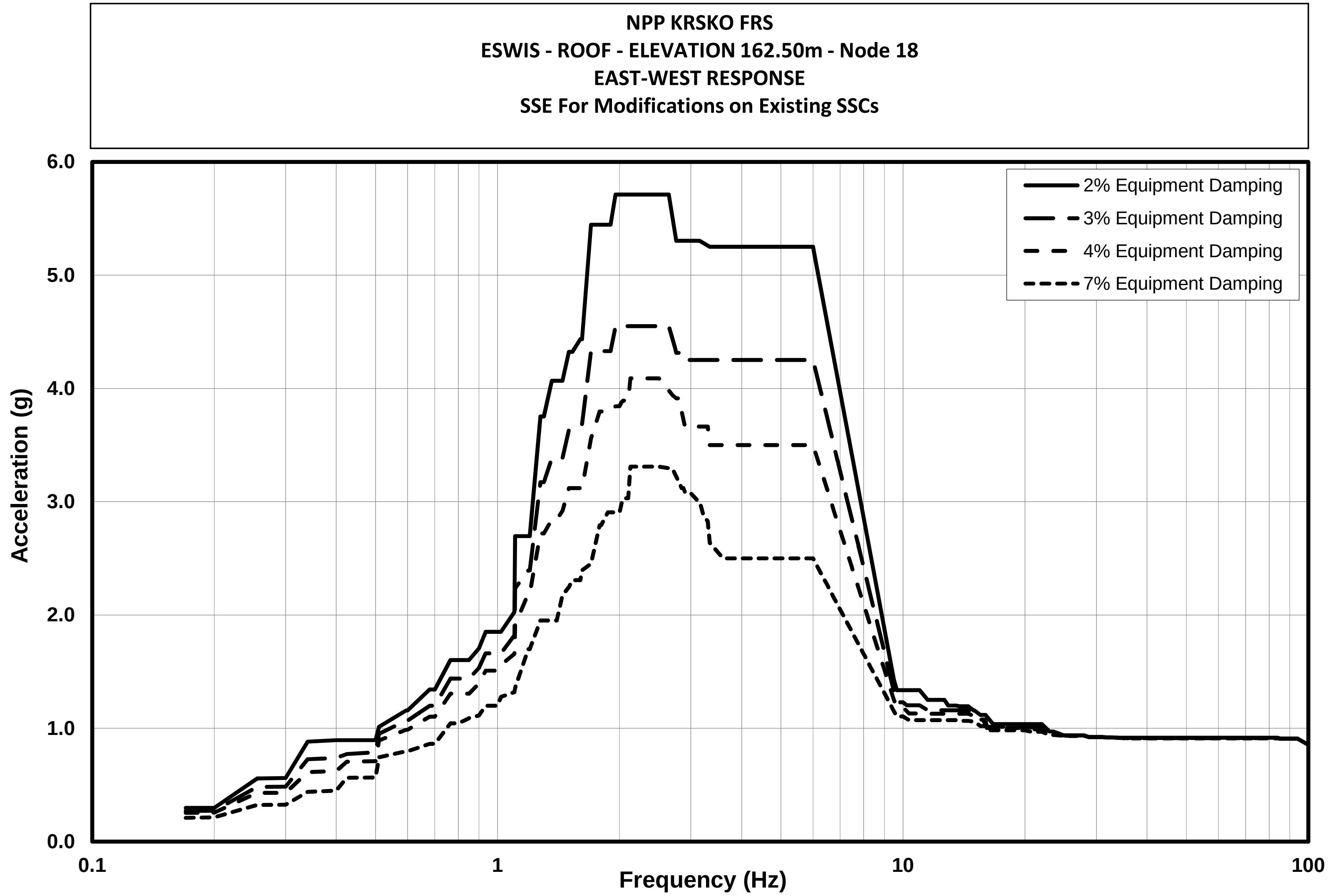

NPP KRSKO FRS
ESWIS - TOP OF WATER INTAKE - ELEVATION 157.10m - Node 15
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)

Figure B93


NPP KRSKO FRS
ESWIS - ROOF - ELEVATION 162.50m - Node 18
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSCs
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


NPP KRSKO FRS
ESWIS - ROOF - ELEVATION 162.50m - Node 18
EAST-WEST RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.1
1
10
100

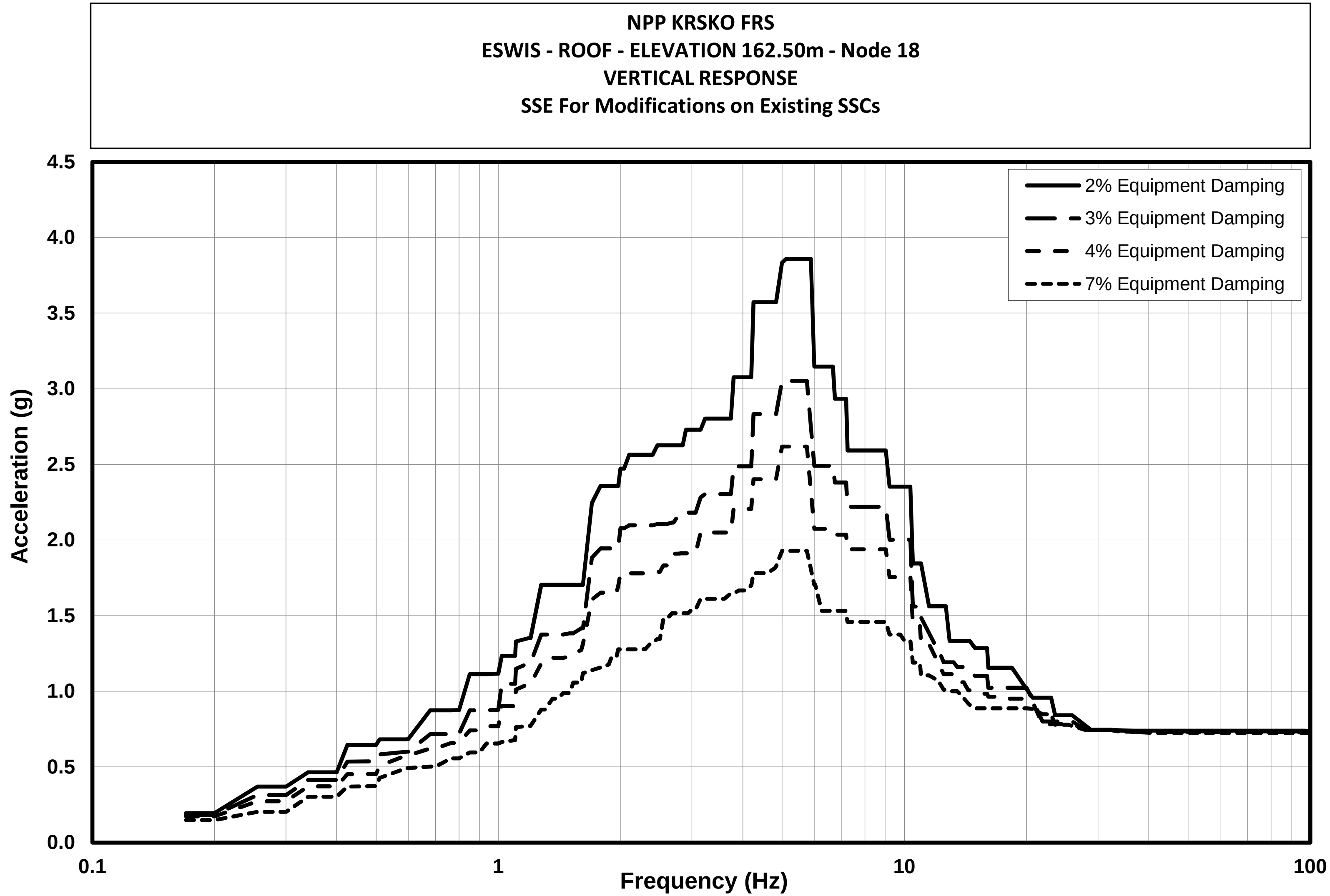
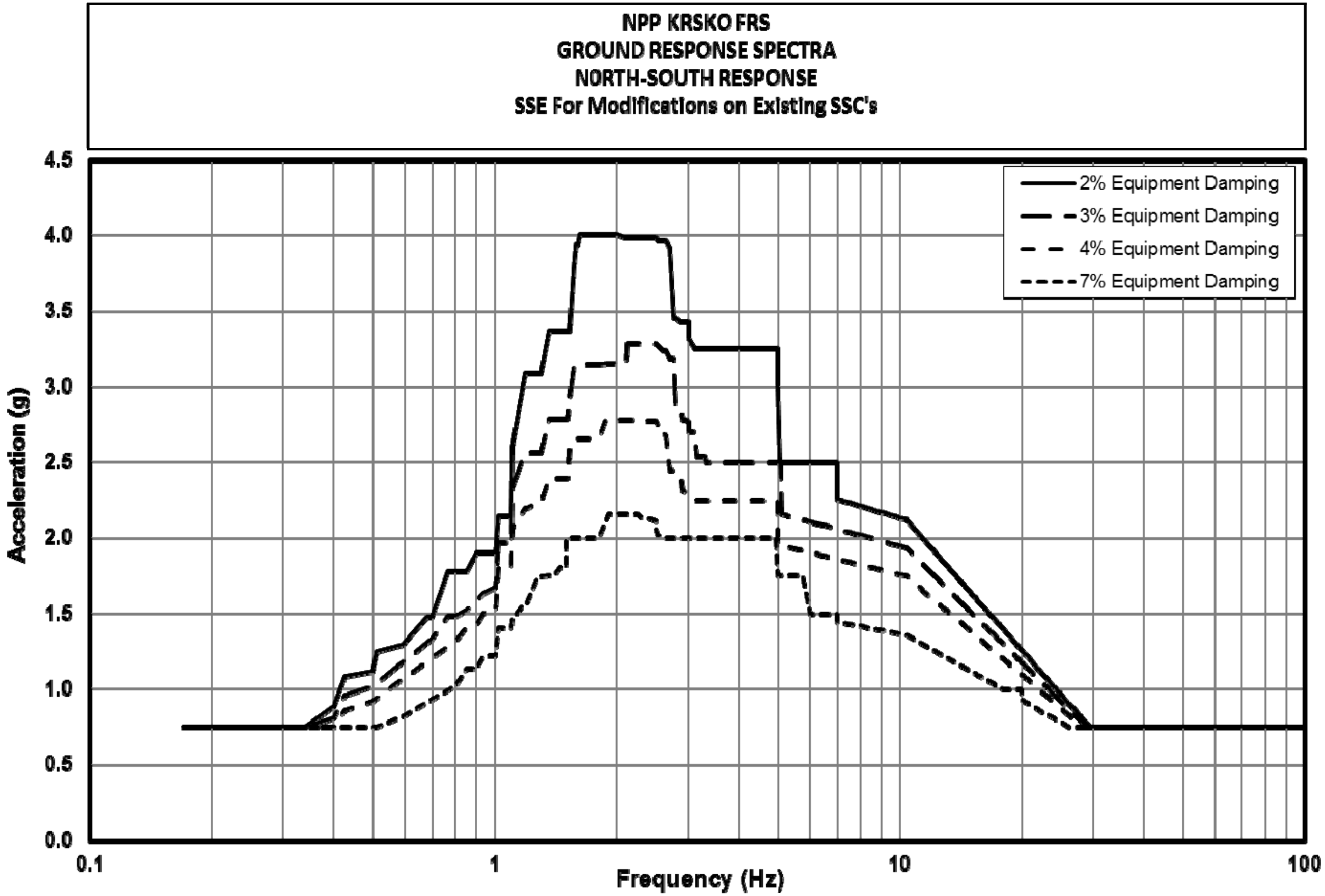

NPP KRSKO FRS
ESWIS - ROOF - ELEVATION 162.50m - Node 18
VERTICAL RESPONSE
SSE For Modifications on Existing SSCs
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100

Figure B96


NPP KRSKO FRS
GROUND RESPONSE SPECTRA
NORTH-SOUTH RESPONSE
SSE For Modifications on Existing SSC's
Acceleration (g)
Frequency (Hz)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

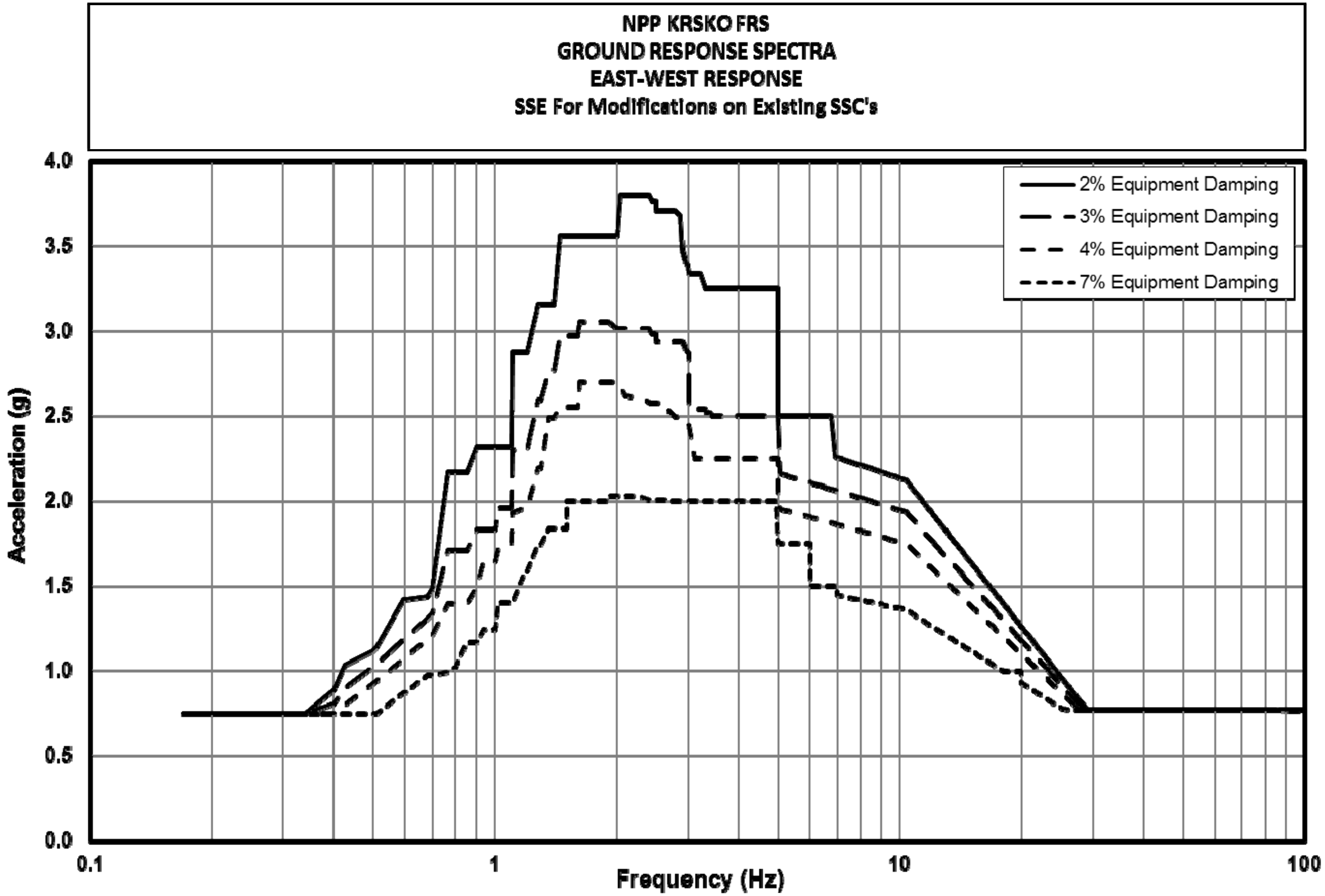

NPP KRSKO FRS
GROUND RESPONSE SPECTRA
EAST-WEST RESPONSE
SSE For Modifications on Existing SSC's
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)

Figure B98

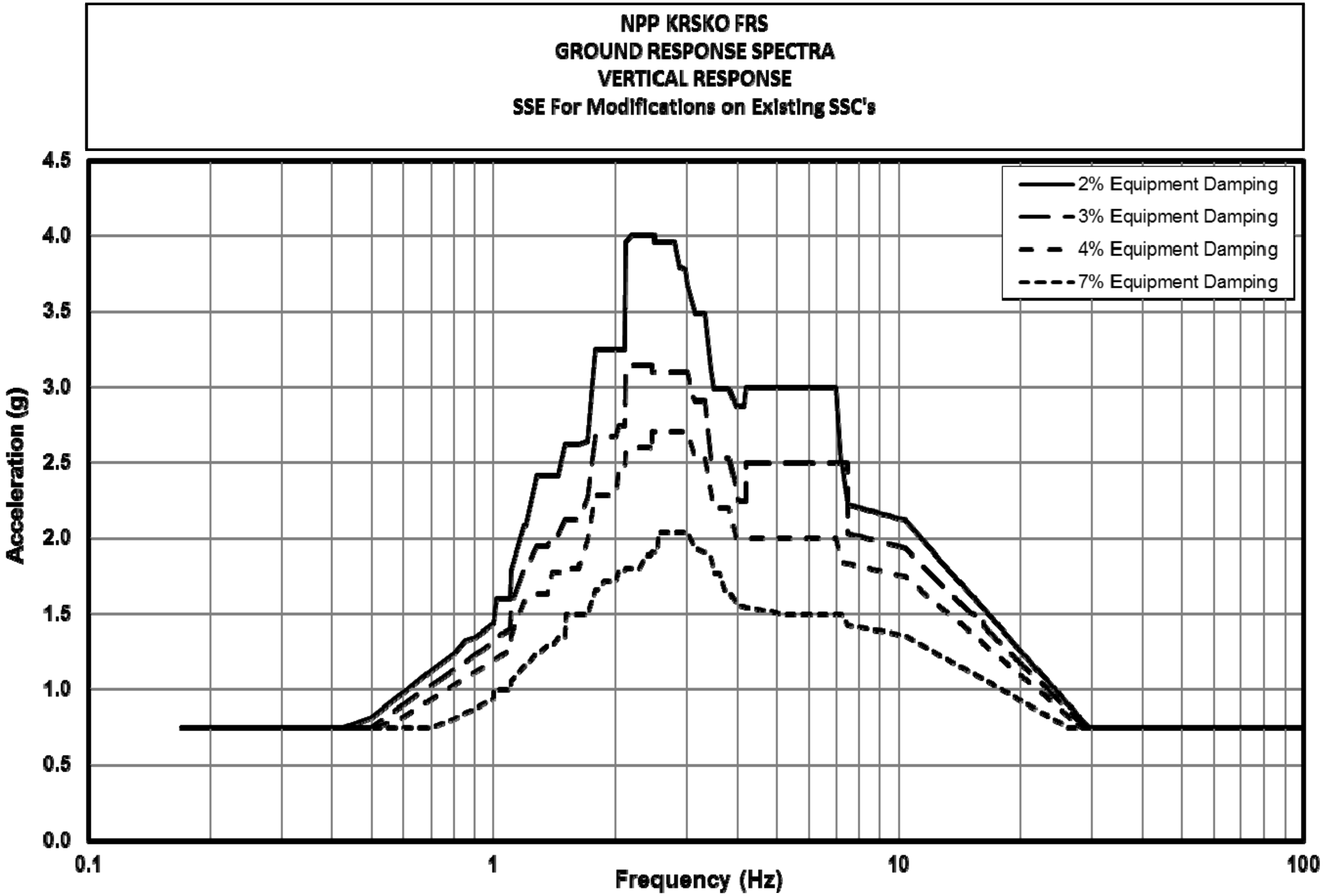

NPP KRSKO FRS
GROUND RESPONSE SPECTRA
VERTICAL RESPONSE
SSE For Modifications on Existing SSC's
Acceleration (g)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure B99

APPENDIX C

TO

SP-S702-044687-000

FLOOR RESPONSE SPECTRA CURVES
FOR
MAIN COMPLEX STRUCTURES, ESSENTIAL SERVICE WATER INTAKE STRUCTURE, AND BUNKERED BUILDING 1 FOR DESIGN EXTENSION CONDITION (DEC)

GROUND RESPONSE SPECTRA ENVELOPE OF
DEC & SSE FOR
NORTH/SOUTH, EAST/WEST & VERTICAL DIRECTIONS

KRSKO NUCLEAR POWER PLANT
KRSKO, SLOVENIA

Floor Response Spectra Figure Matrix
for Design Extension Condition (DEC 2xSSE)
Main Island

Building	Elevation	FRS Figure #		
		DEC (0.6g)		
		North-South	East-West	Vertical
Reactor Building Base	98.78 m	C1	C2	C3
Interior Structure	100.30 m	C4	C5	C6
	107.62 m	C7	C8	C9
	115,55 m	C10	C11	C12
Containment Vessel	127.48 m	C13	C14	C15
	140.24m	C16	C17	C18
	153.29 m	C19	C20	C21
Shield Building	136.21 m	C22	C23	C24
	156.74 m	C25	C26	C27
Auxiliary Building	100.30 m	C28	C29	C30
	107.62 m	C31	C32	C33
	115.55 m	C34	C35	C36
	123.17 m	C37	C38	C39
Intermediate Building	100.30 m	C40	C41	C42
	107.62 m	C43	C44	C45
	115.55 m	C46	C47	C48
	123.17 m	C49	C50	C51
Control Building	100.30 m	C52	C53	C54
	107.62 m	C55	C56	C57
	115.55 m	C58	C59	C60
	123.17 m	C61	C62	C63
Fuel Handling Building	100.30 m	C64	C65	C66
	107.62 m	C67	C68	C69
	115.55 m	C70	C71	C72
	134.35 m	C73	C74	C75
Drum Storage Area	100.30 m	C76	C77	C78
	107.62 m	C79	C80	C81
	115.55 m	C82	C83	C84
	123.17 m	C85	C86	C87

Floor Response Spectra Figure Matrix
for Design Extension Condition (DEC 2xSSE)
Essential Service Water Intake Structure (ESWIS)

ESWIS Location	Elevation	***FRS Figure #***		
		DEC (0.6g)		
		North-South	**East-West**	**Vertical**
Water Intake Base	145.00 m	C88	C89	C90
Top of Water Intake	157.10 m	C91	C92	C93
Roof	162.50 m	C94	C95	C96

Floor Response Spectra Figure Matrix
for Design Extension Condition (DEC 2xSSE)
Bunkered Building 1 (BB1)

BB1 Location	Elevation	***FRS Figure #***		
		DEC (0.6g)		
		North-South	**East-West**	**Vertical**
DG Slab Area	0.30 m	C97	C98	C99
DG Roof Area	8.70 m	C100	C101	C102
Battery Room	0.30 m	C103	C104	C105
Battery Charger Room	0.30 m	C106	C107	C108
Cable Room (018)	-2.20 m	C109	C110	C111
Cable Room	-2.20 m	C112	C113	C114
Switchgear Room	0.30 m	C115	C116	C117
400 V Switchgear Room	0.30 m	C118	C119	C120
ECR and TSC	4.20 m	C121	C122	C123
Roof	8.70 m	C124	C125	C126
ECR HVAC Room Roof	13.30 m	C127	C128	C129

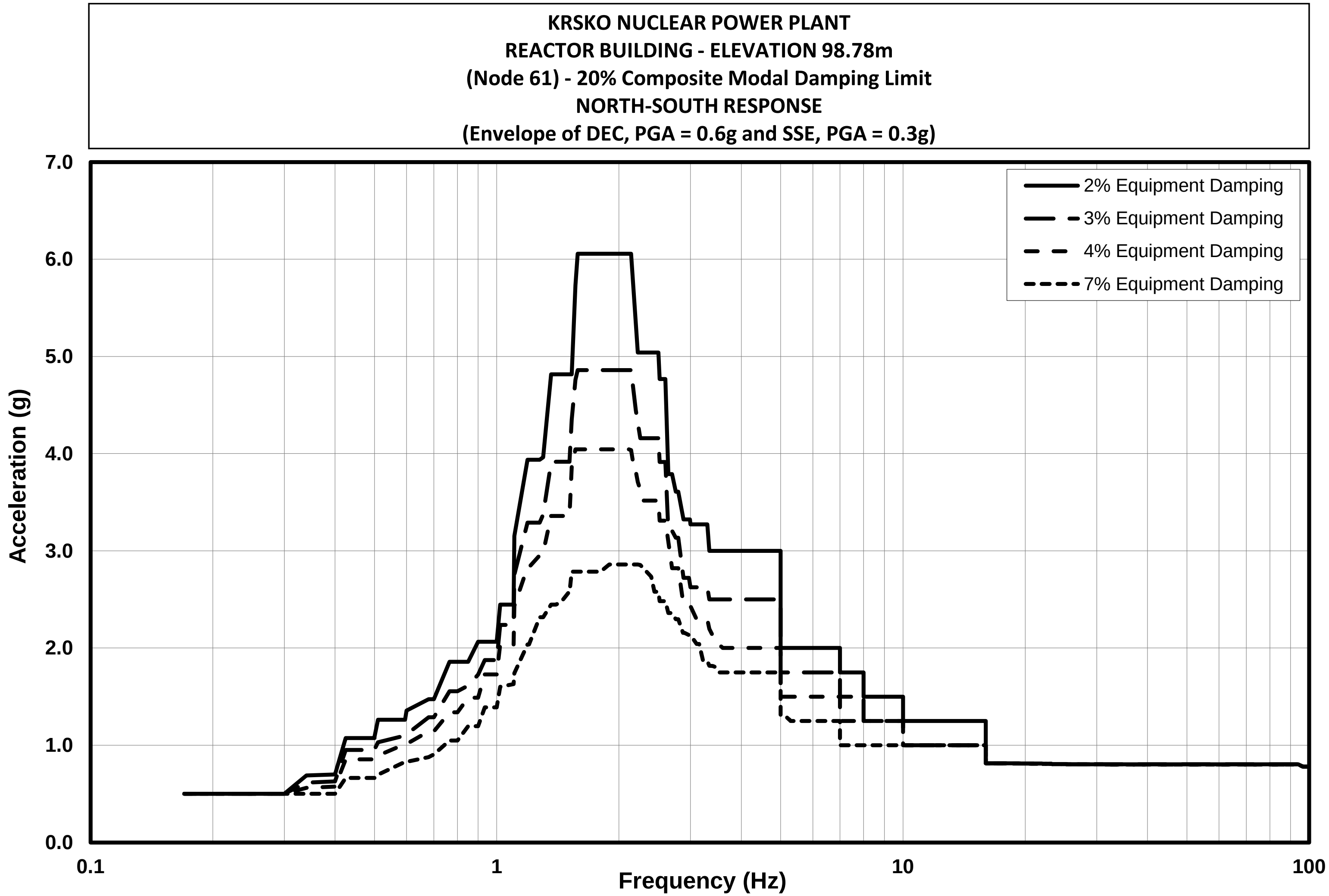
Floor Response Spectra Figure Matrix
for Design Extension Condition (DEC 2xSSE)
Ground Response Spectra

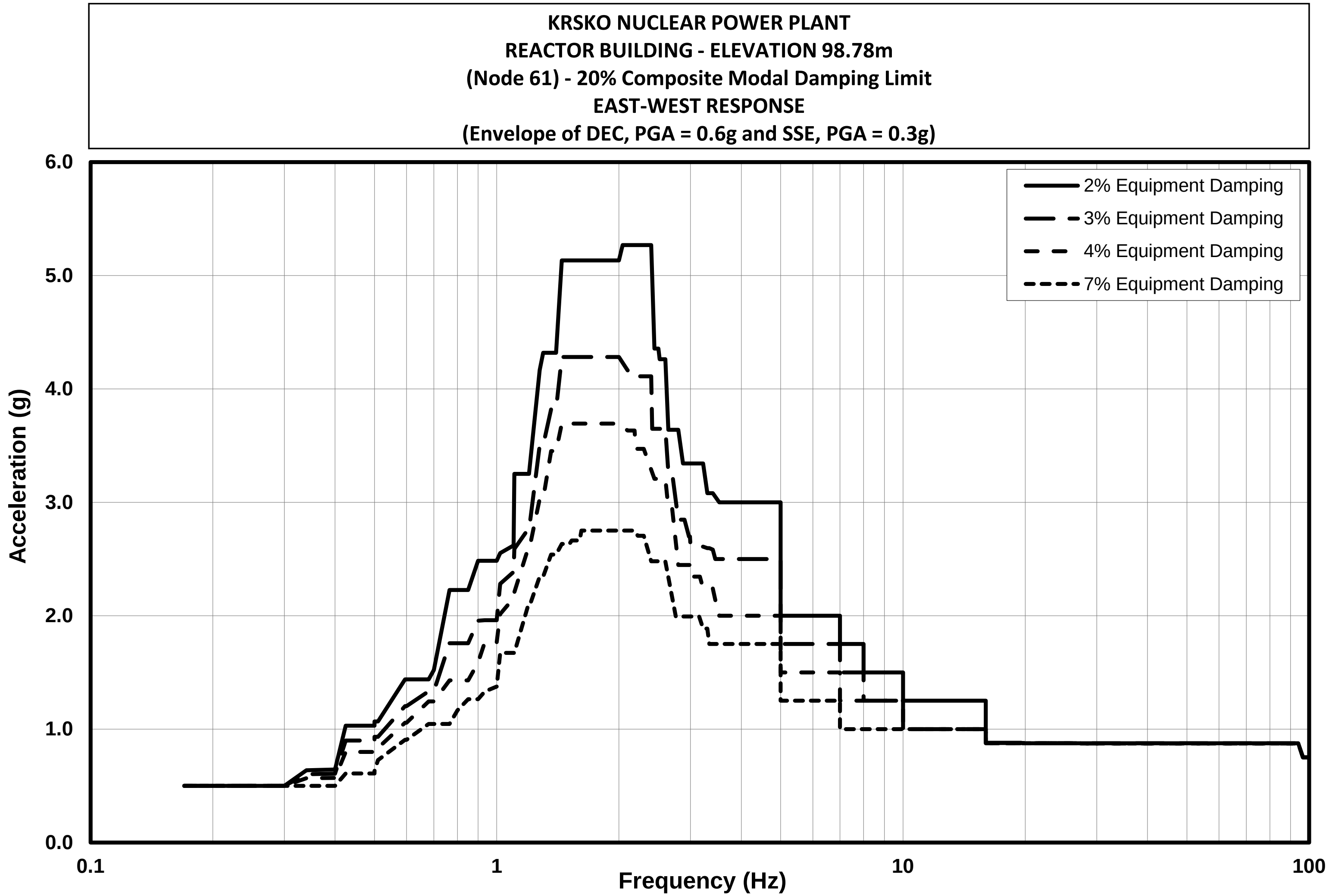
Location	Elevation	***FRS Figure #***		
		DEC (0.6g)		
		North-South	**East-West**	**Vertical**
Ground	100 m, nominal	C130	C131	C132

Notes:

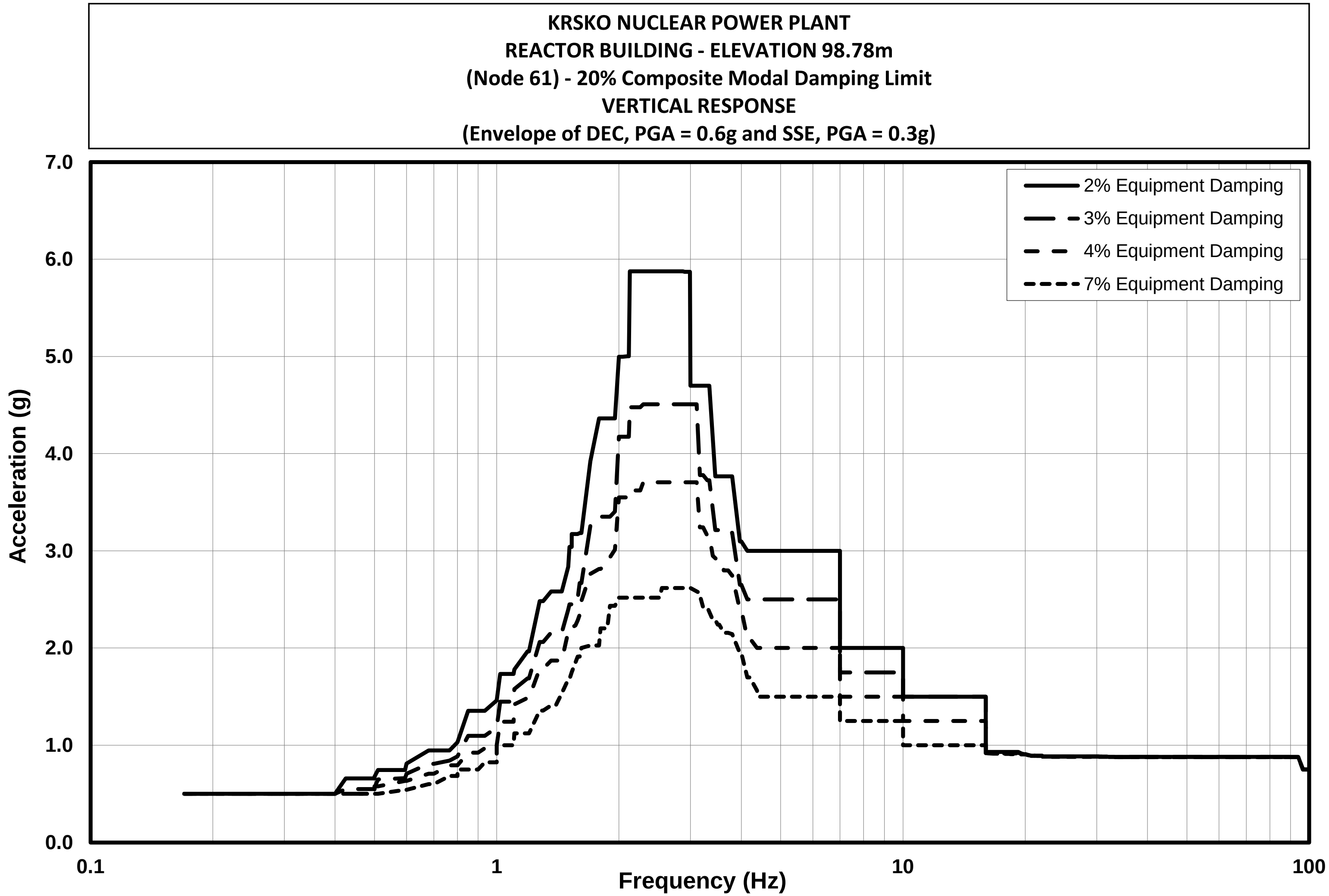
1. Frequency in Hz (cycles per second) and Acceleration in g's.

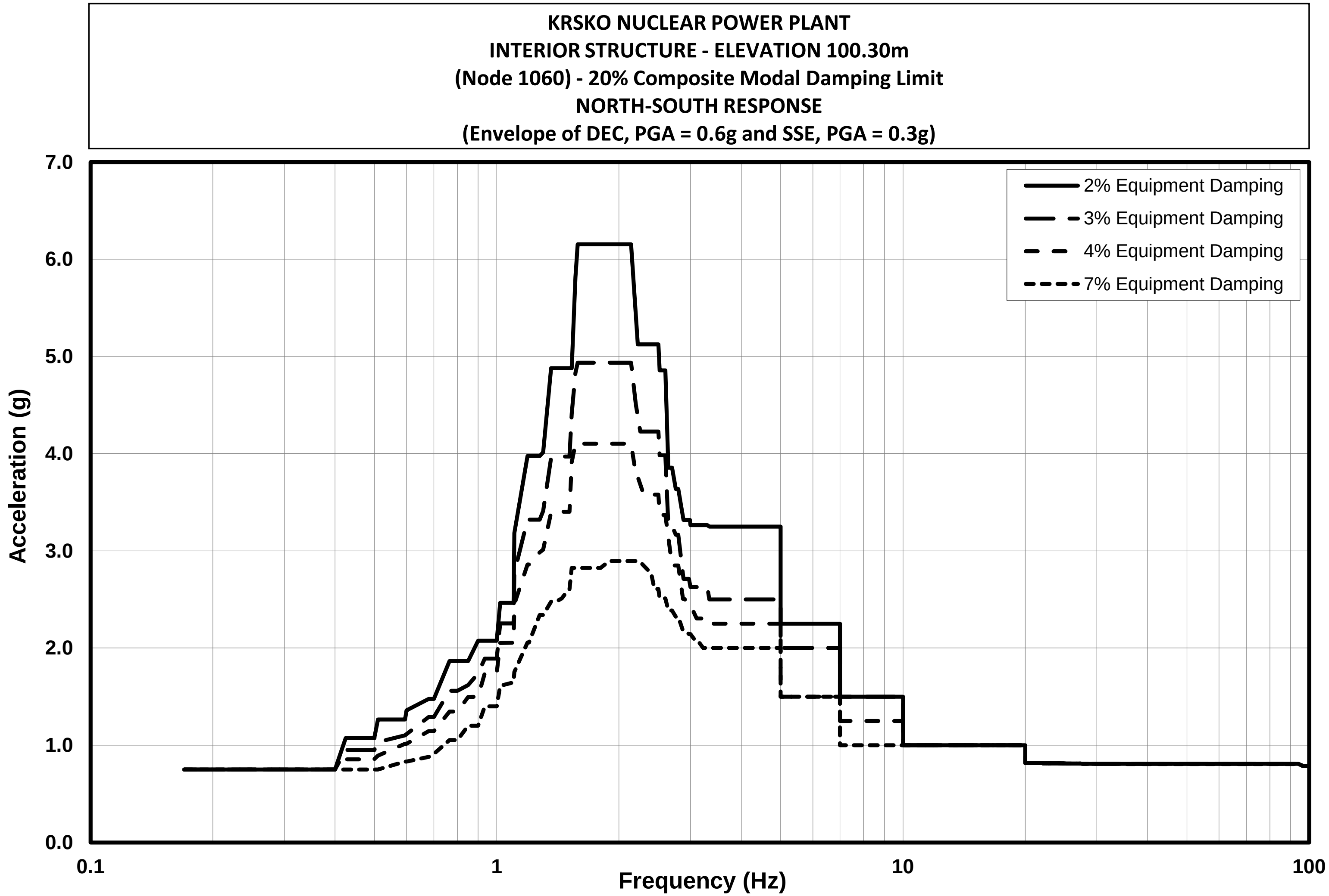
2. The design basis SSE FRS peak ground accelerations have been increased by a factor of 2.0 for the Main Complex, ESWIS, and BB1 for Design Extension Conditions (2xSSE, 0.6g).
3. The Main Complex and ESWIS DEC FRS are based on a 20% limit on composite modal damping and envelope the SSE FRS.
4. The BB1 DEC FRS envelope the 1.5xSSE FRS and lower elevation FRS.
5. For Component Cooling Building FRS, use the FRS for the Auxiliary Building.


KRSKO NUCLEAR POWER PLANT
REACTOR BUILDING - ELEVATION 98.78m
(Node 61) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100



KRSKO NUCLEAR POWER PLANT
REACTOR BUILDING - ELEVATION 98.78m
(Node 61) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
REACTOR BUILDING - ELEVATION 98.78m
(Node 61) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 100.30m
(Node 1060) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

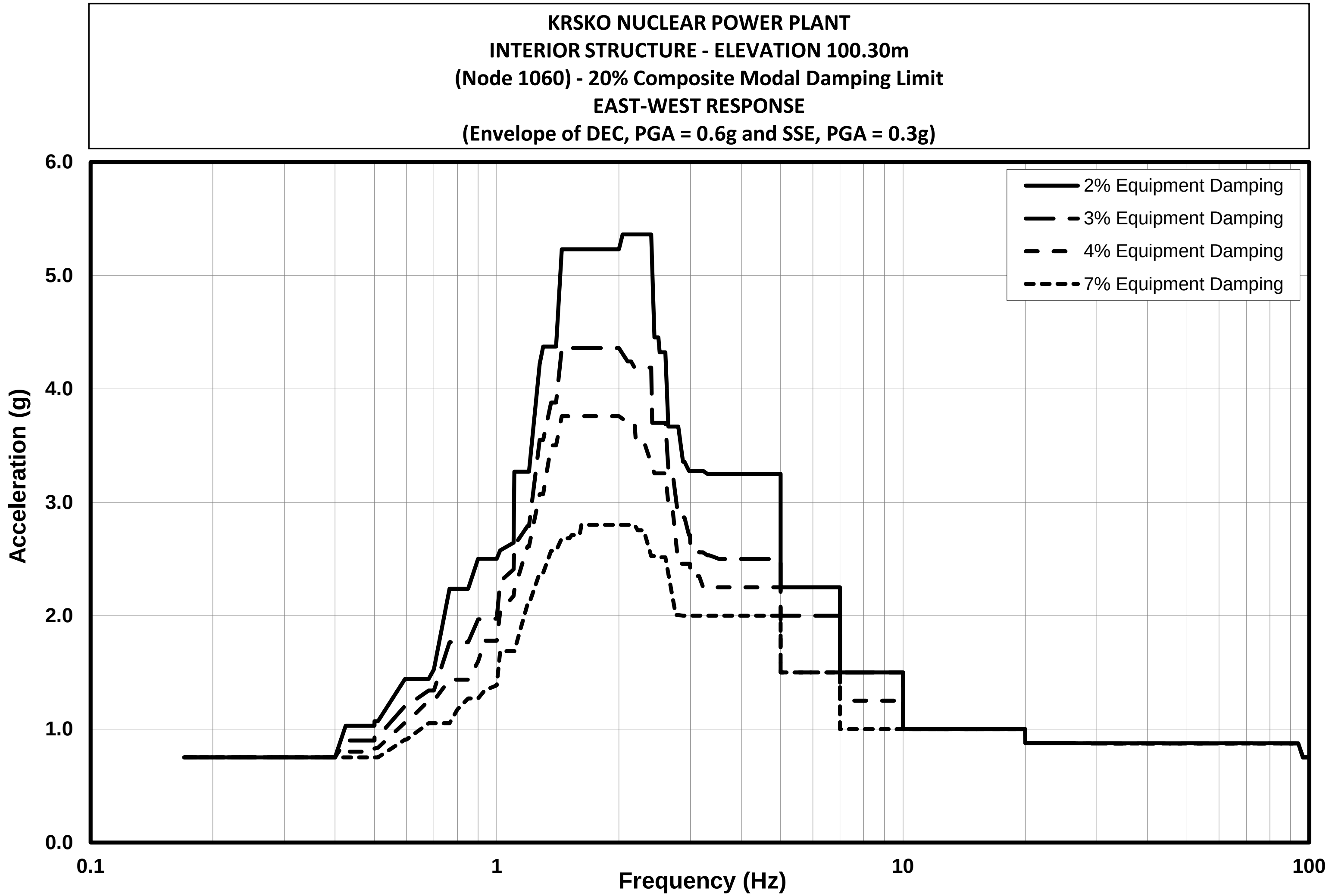
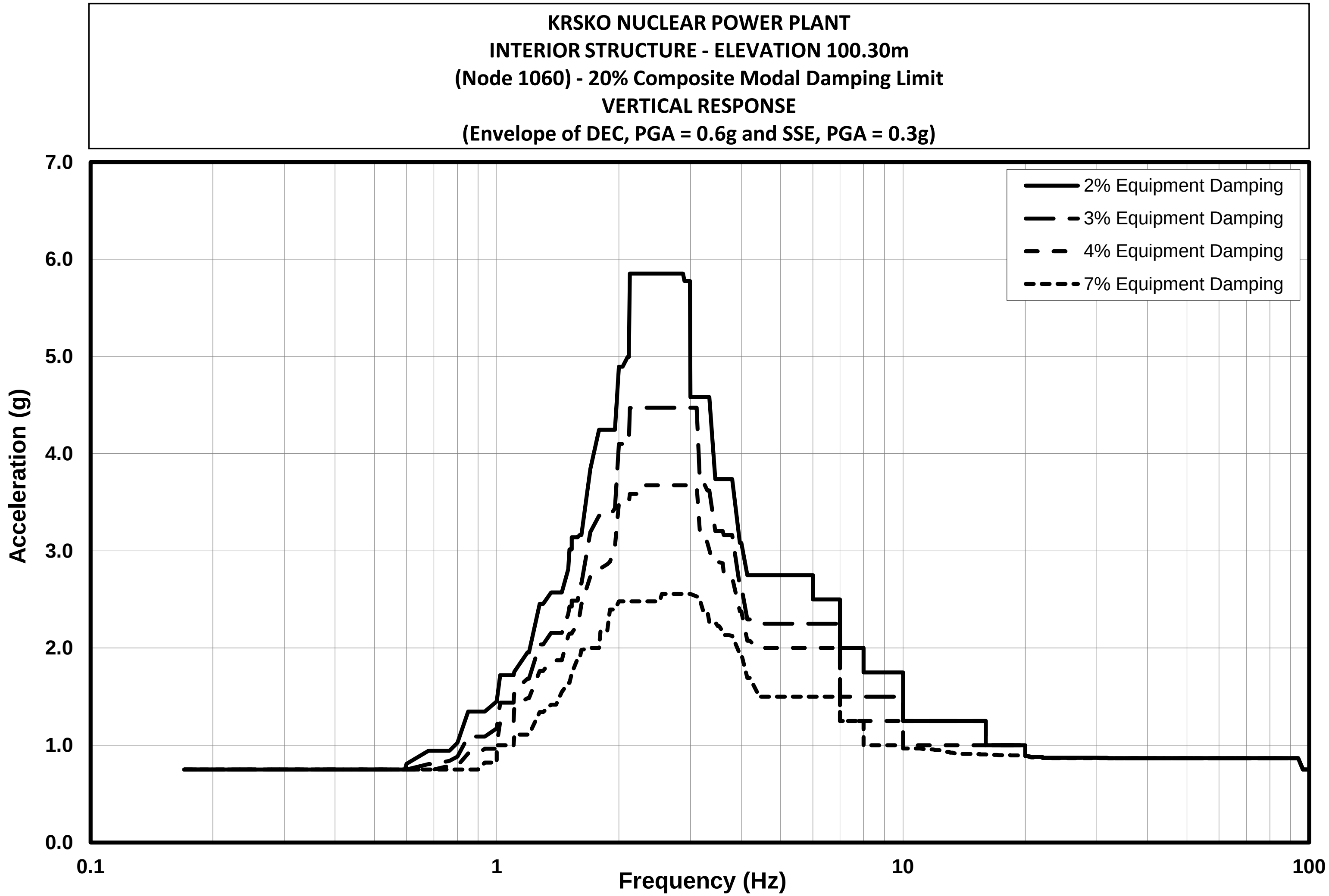

KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 100.30m
(Node 1060) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.1
1
10
100
Frequency (Hz)

Figure C5


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 100.30m
(Node 1060) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

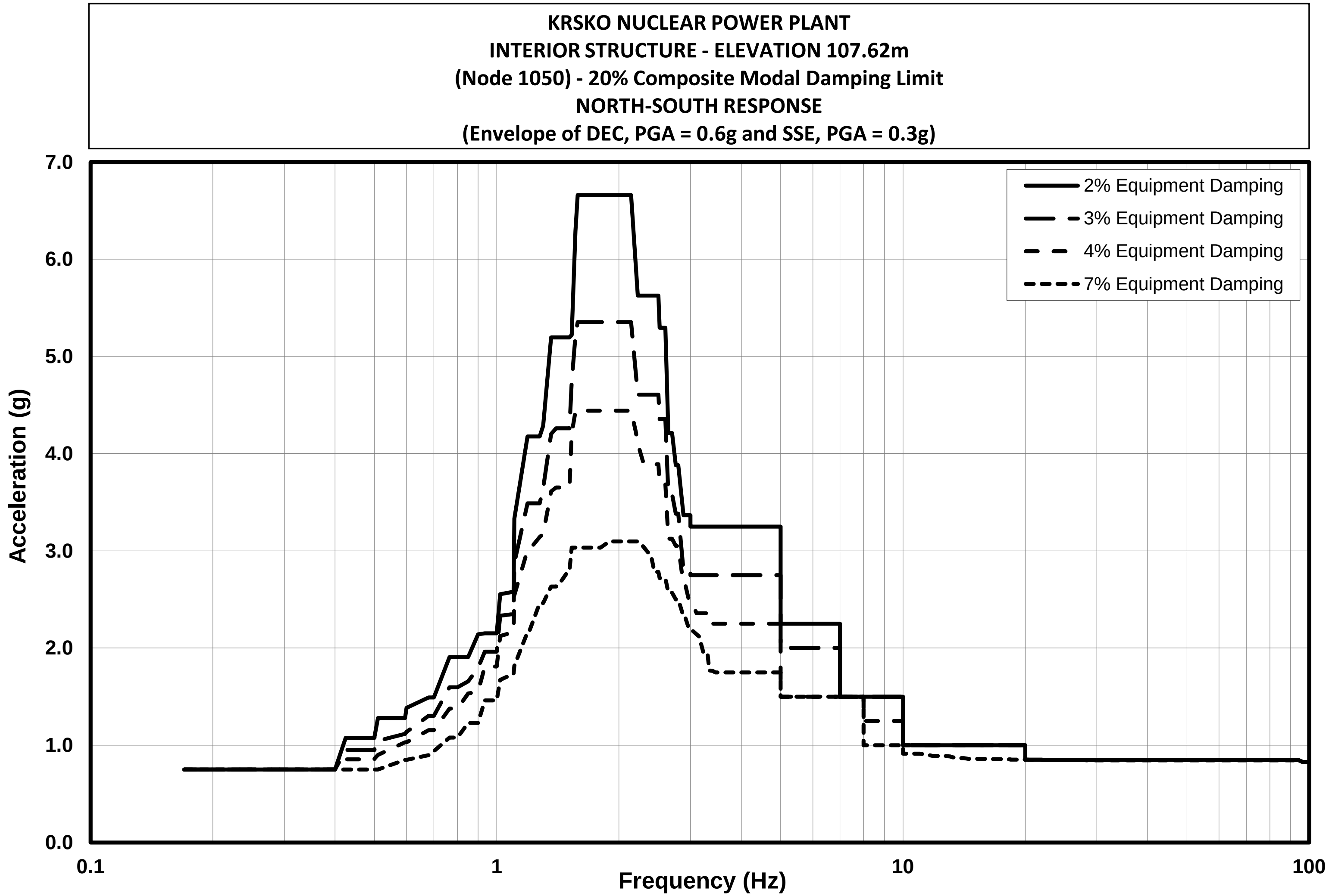
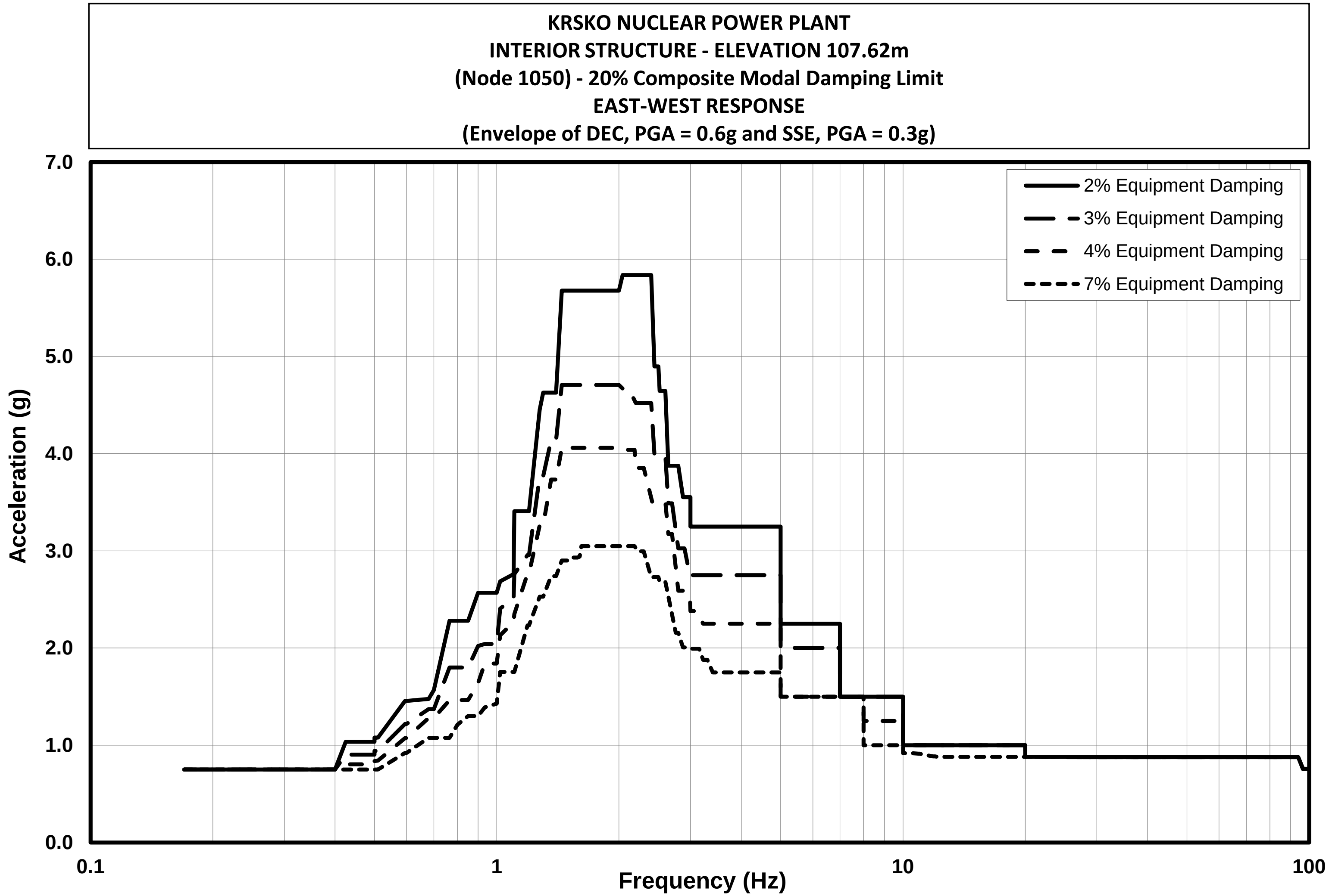
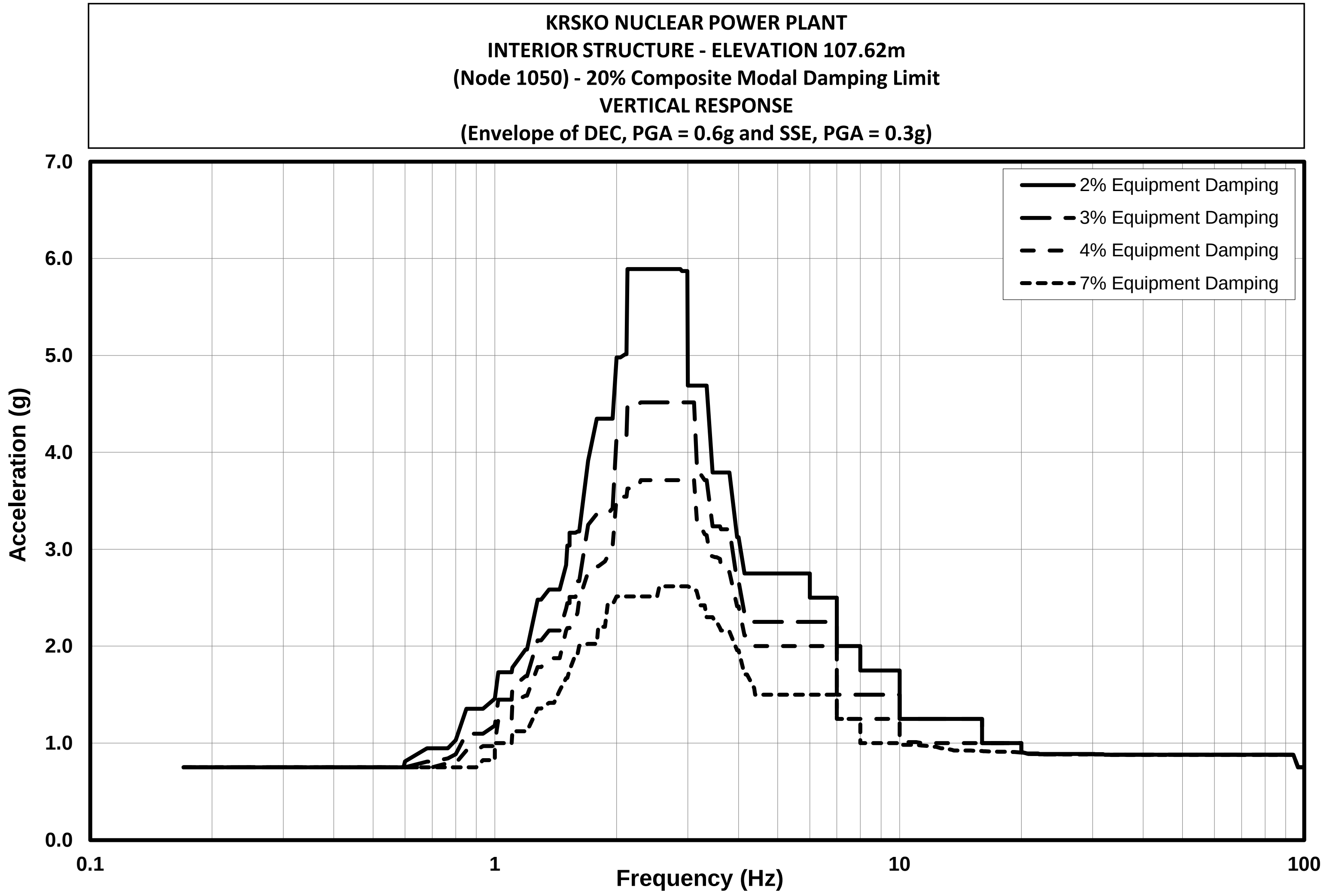
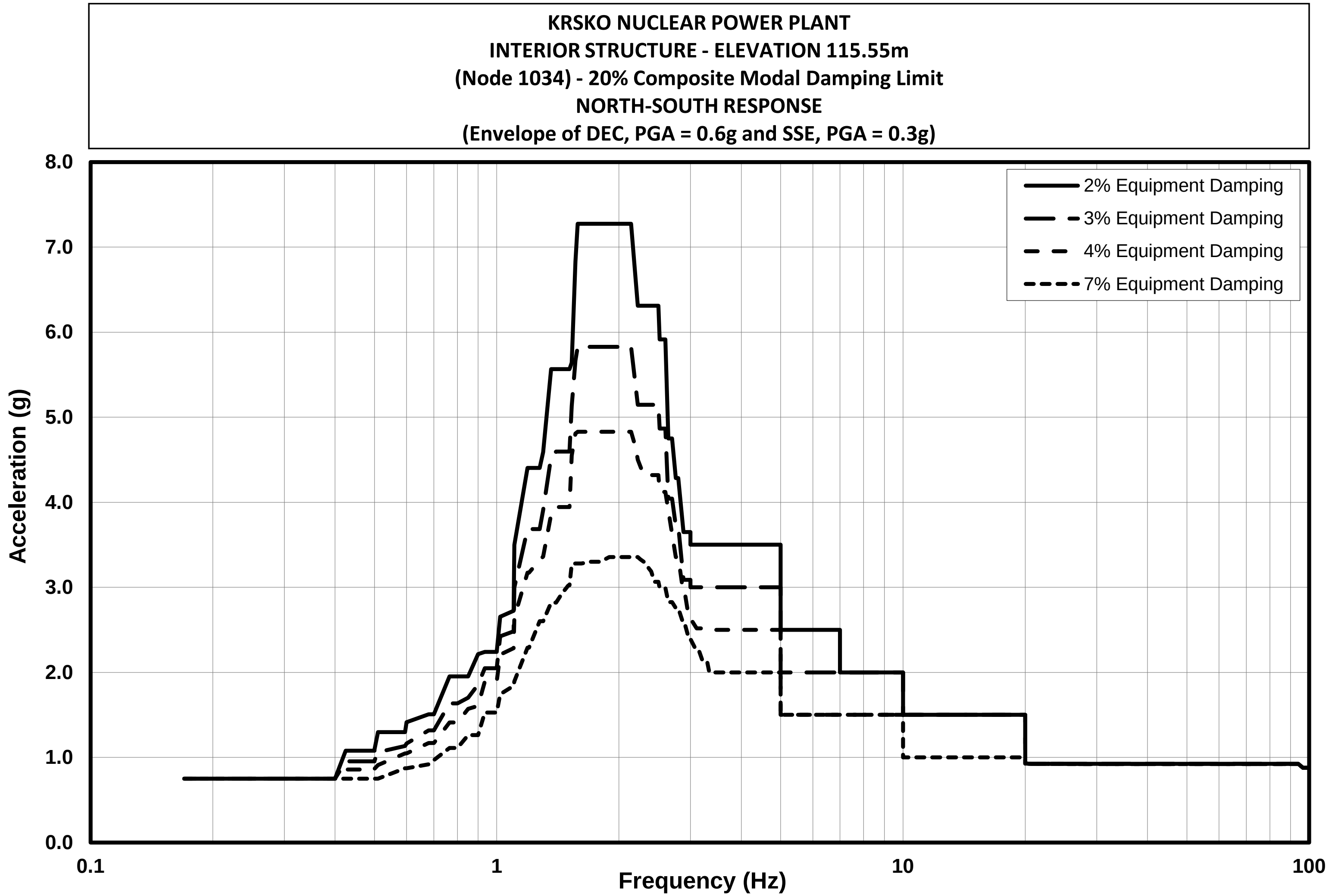
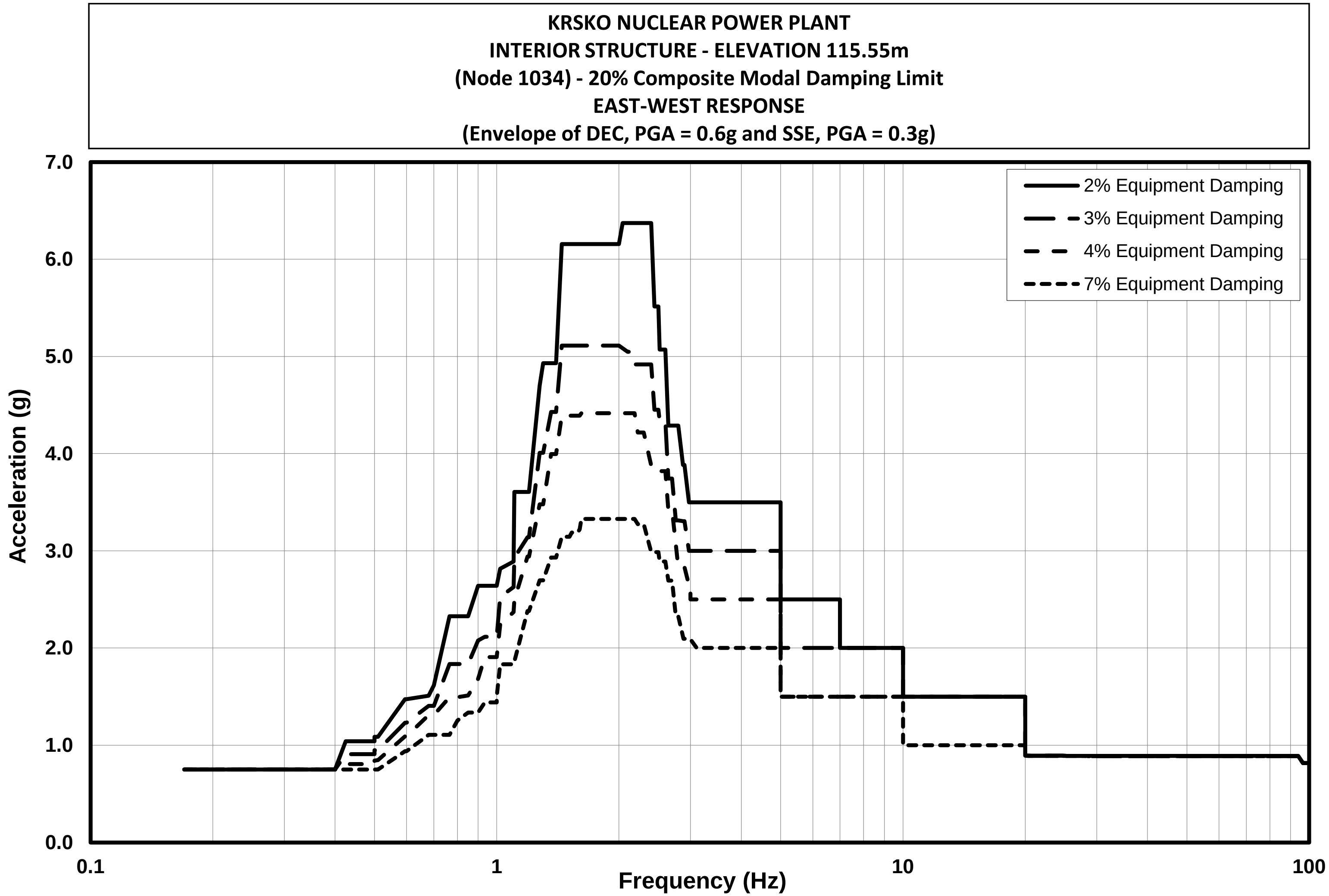

KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 107.62m
(Node 1050) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100

Figure C7


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 107.62m
(Node 1050) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 107.62m
(Node 1050) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 115.55m
(Node 1034) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 115.55m
(Node 1034) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

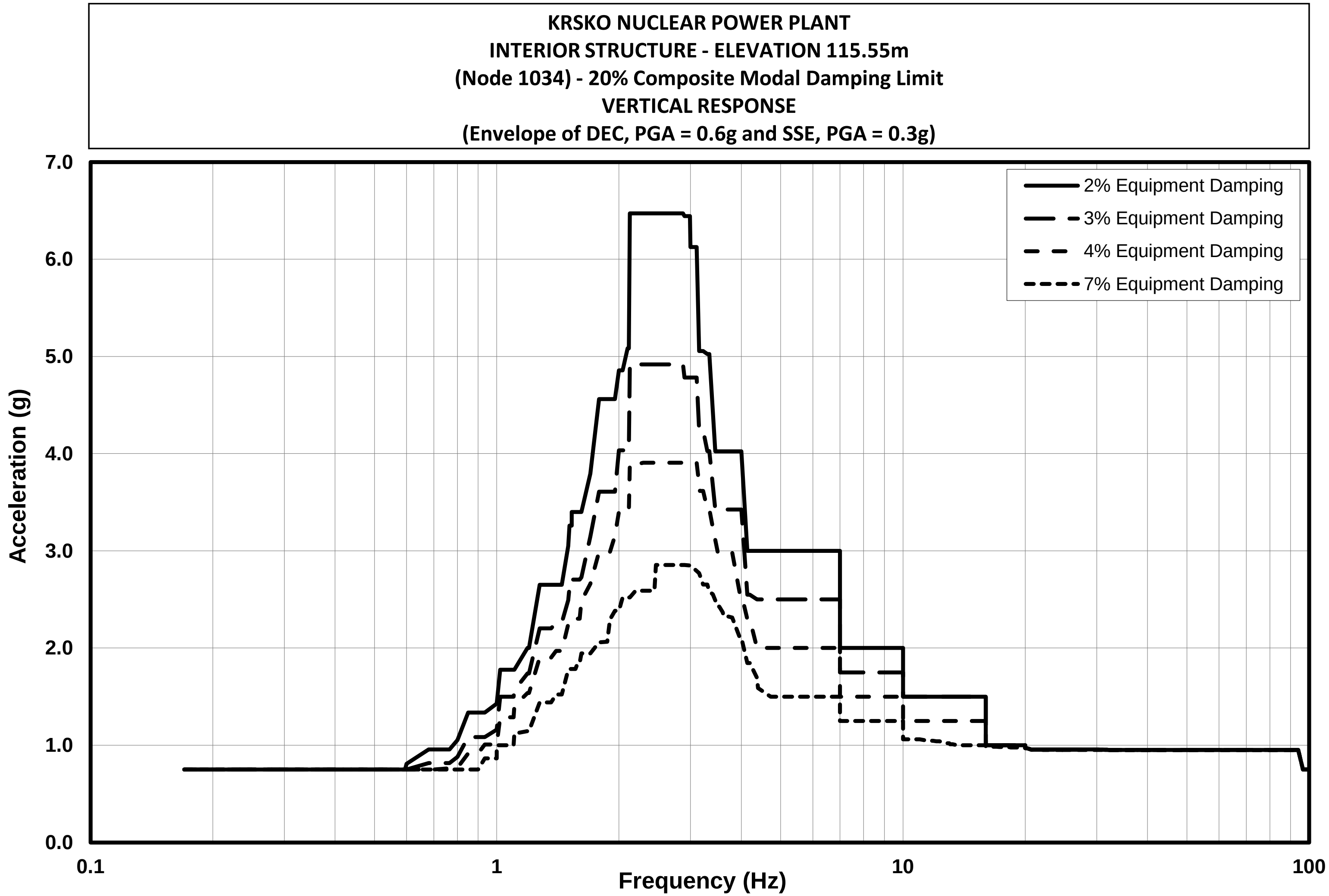
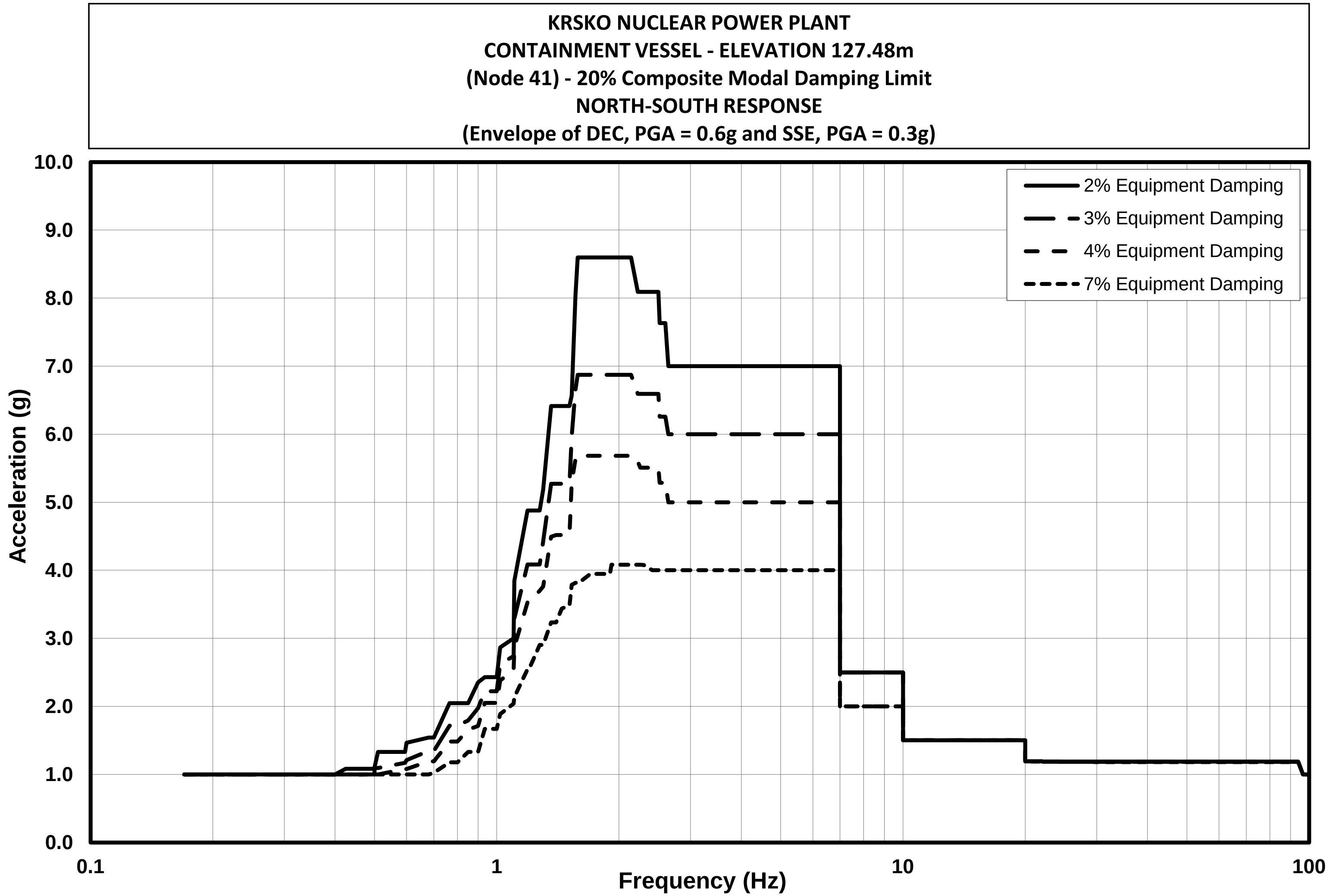
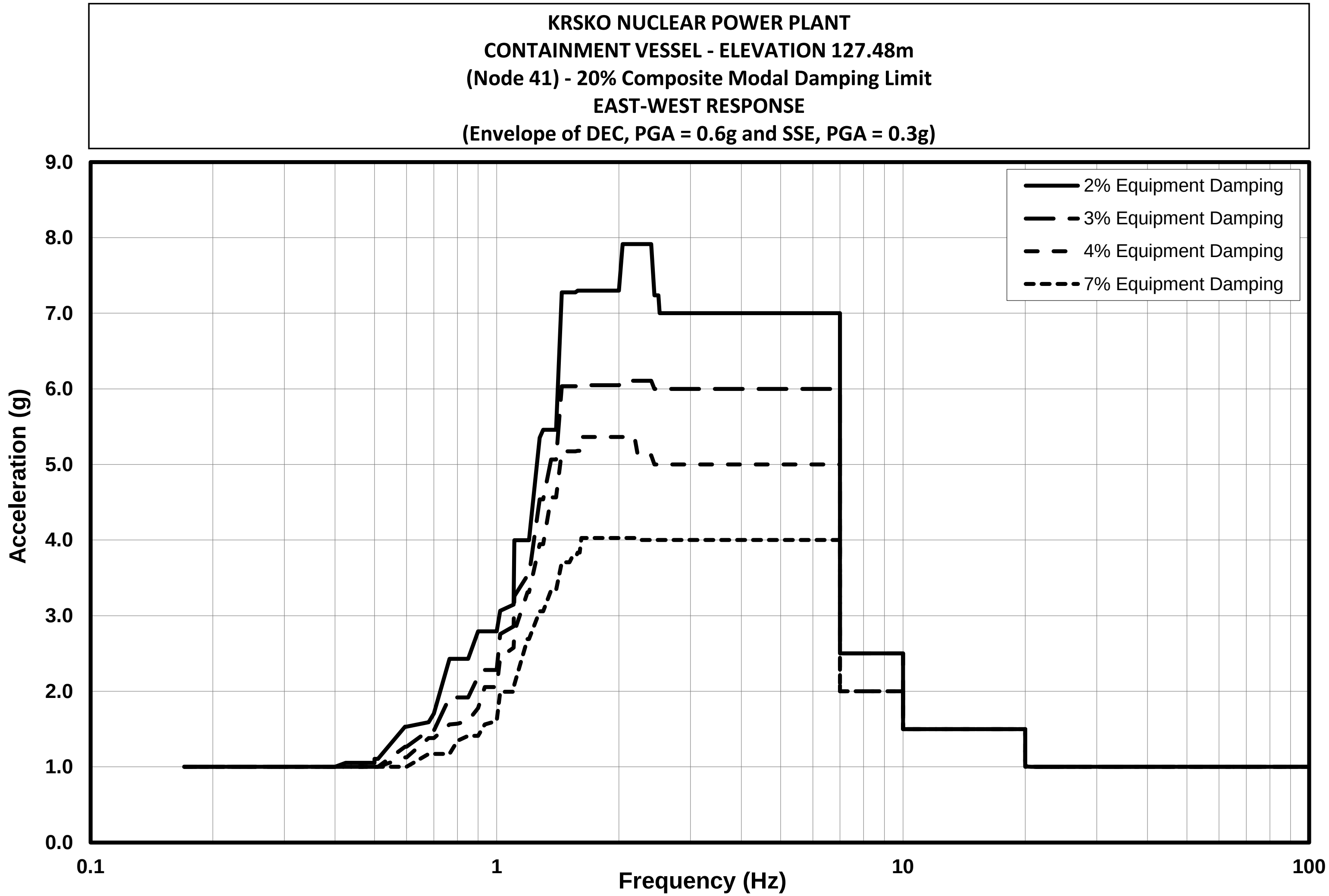

KRSKO NUCLEAR POWER PLANT
INTERIOR STRUCTURE - ELEVATION 115.55m
(Node 1034) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C12


KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 127.48m
(Node 41) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 127.48m
(Node 41) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

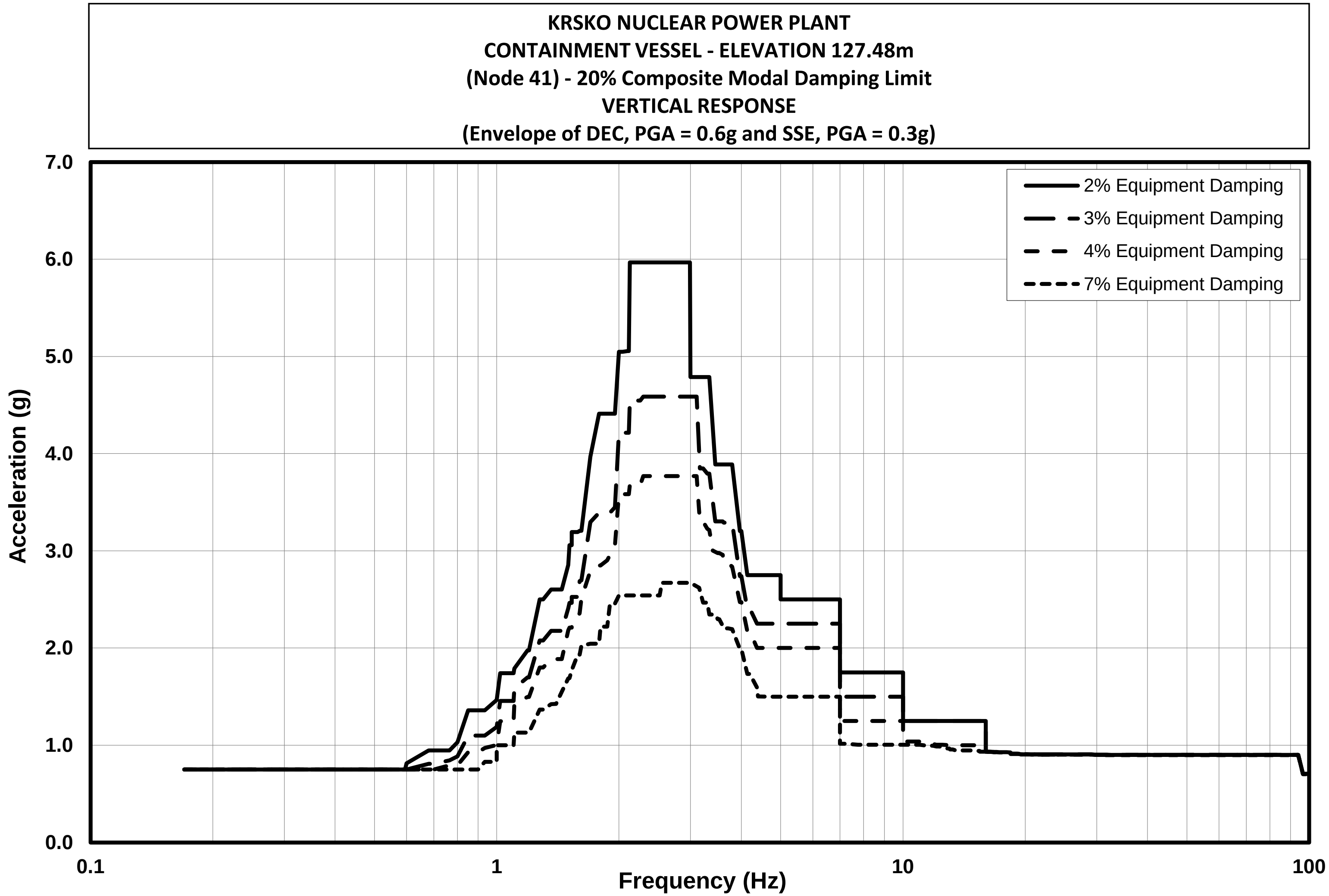
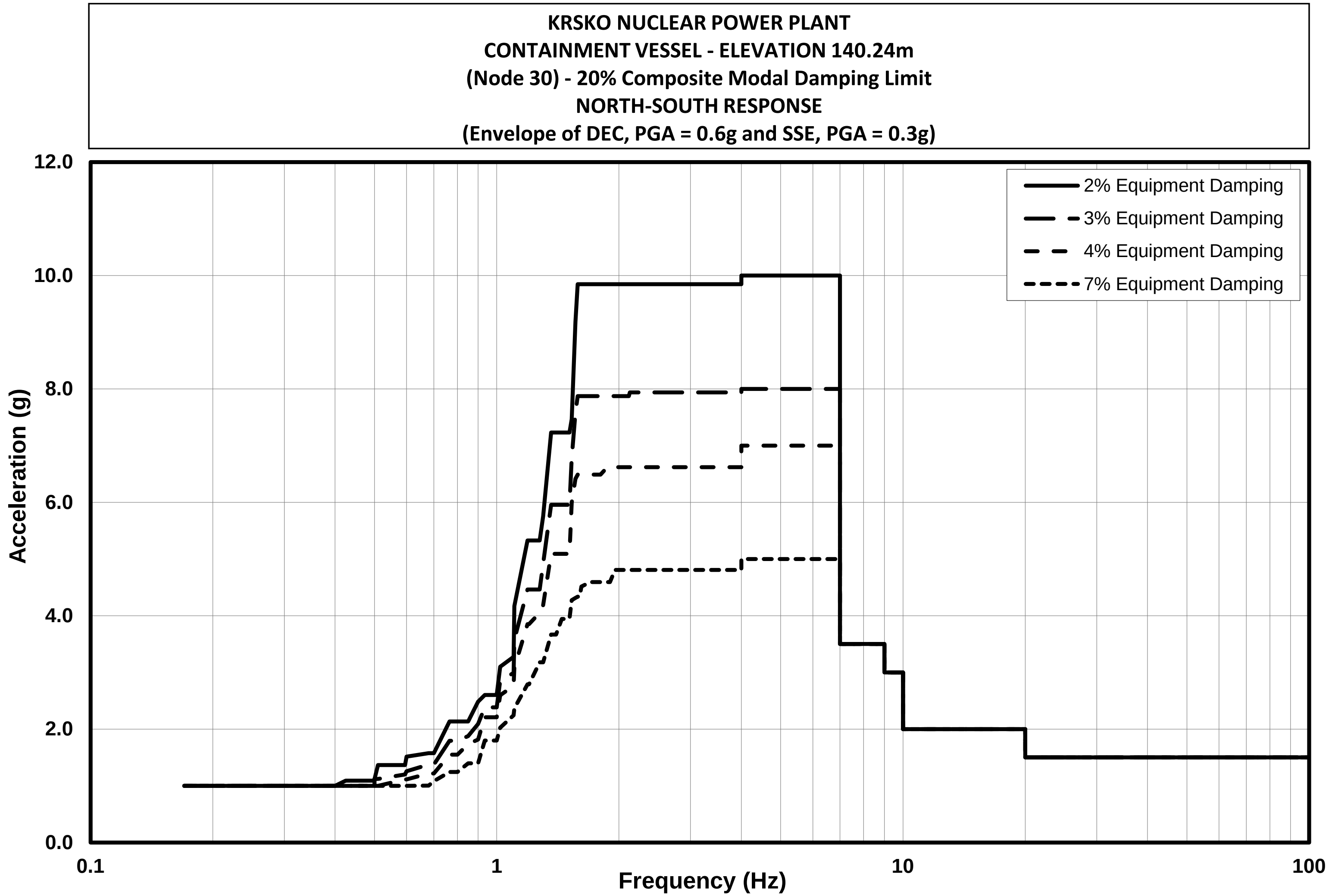
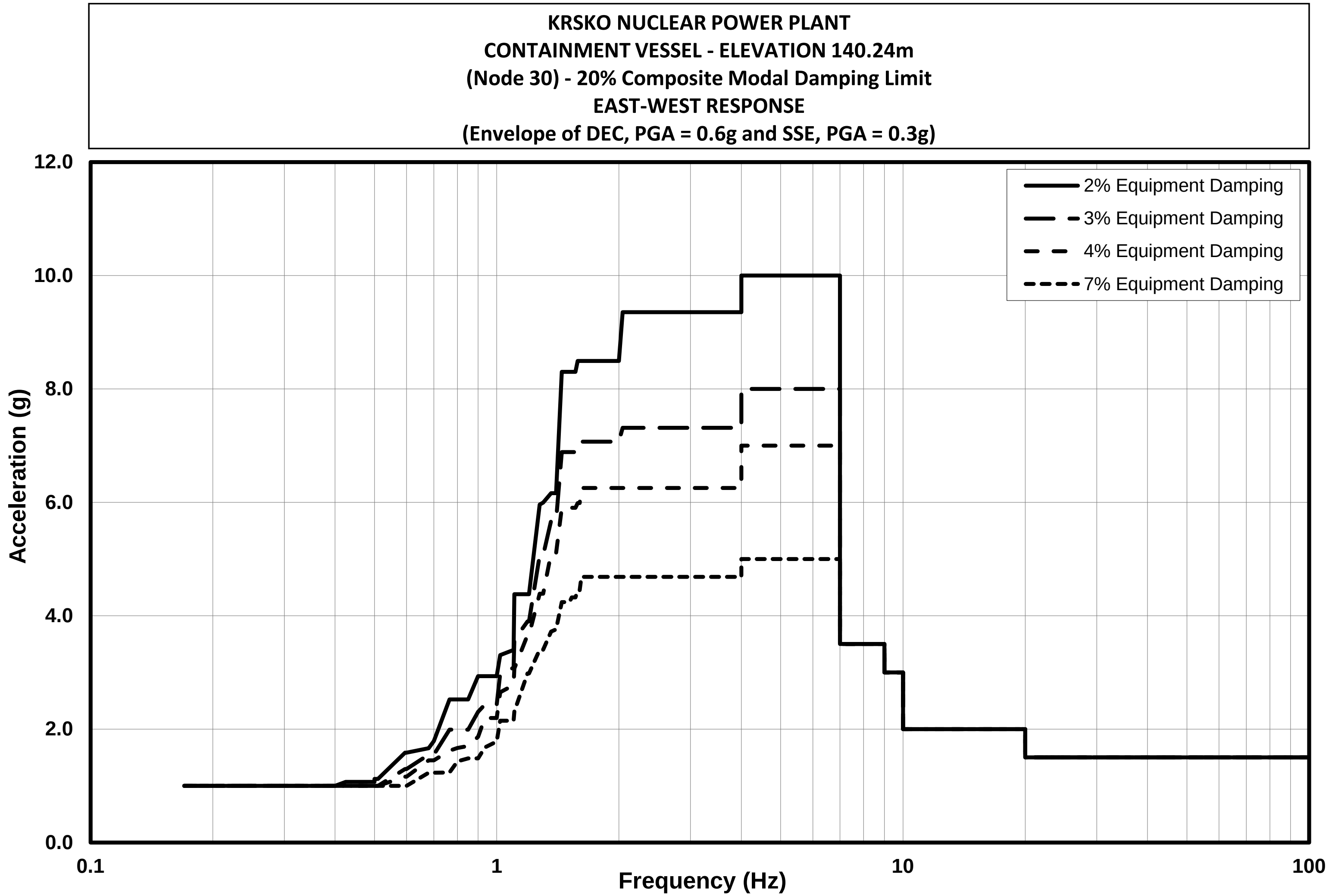

KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 127.48m
(Node 41) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C15


KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 140.24m
(Node 30) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
0.1
1
10
100



KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 140.24m
(Node 30) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

Figure C17

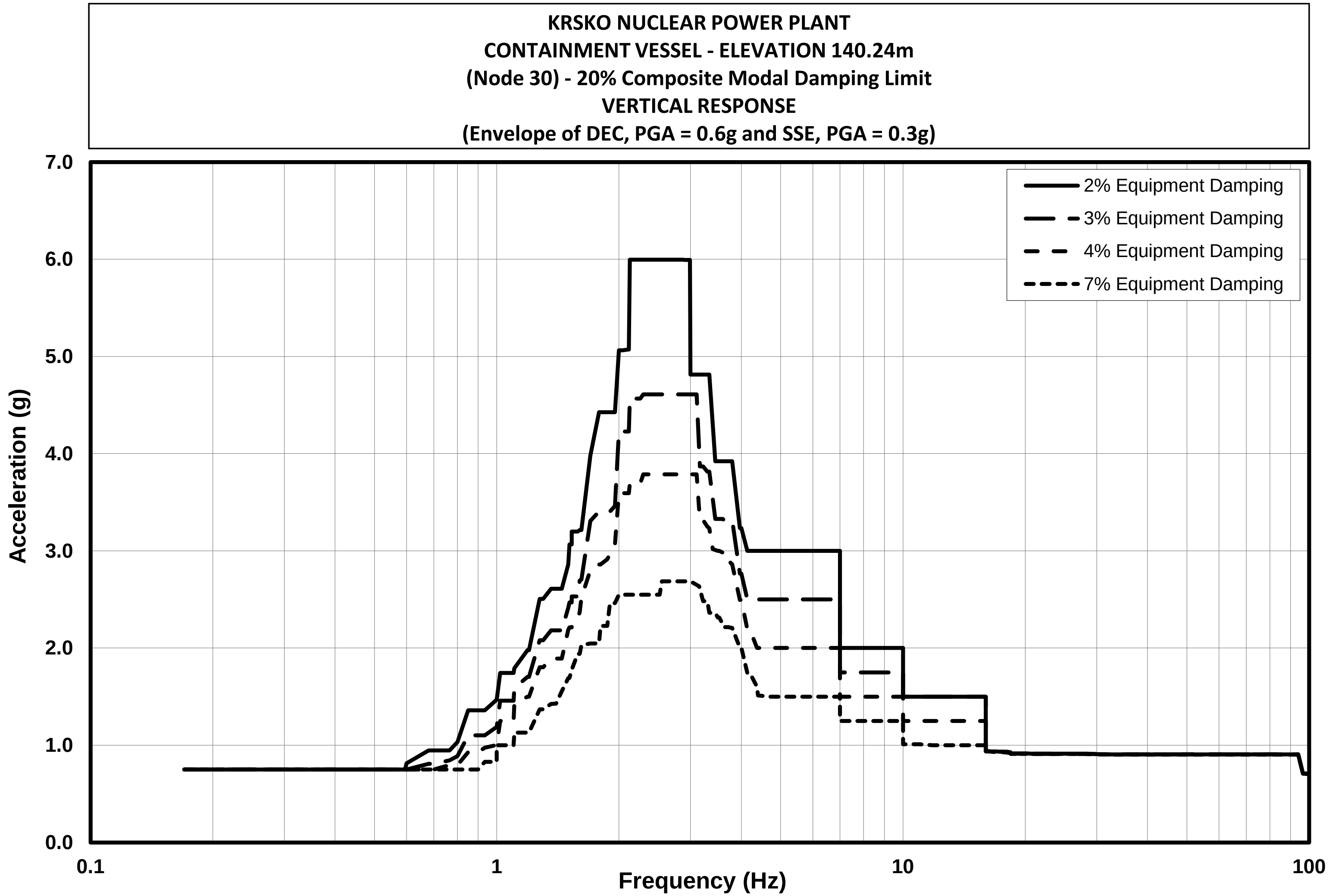

KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 140.24m
(Node 30) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C18

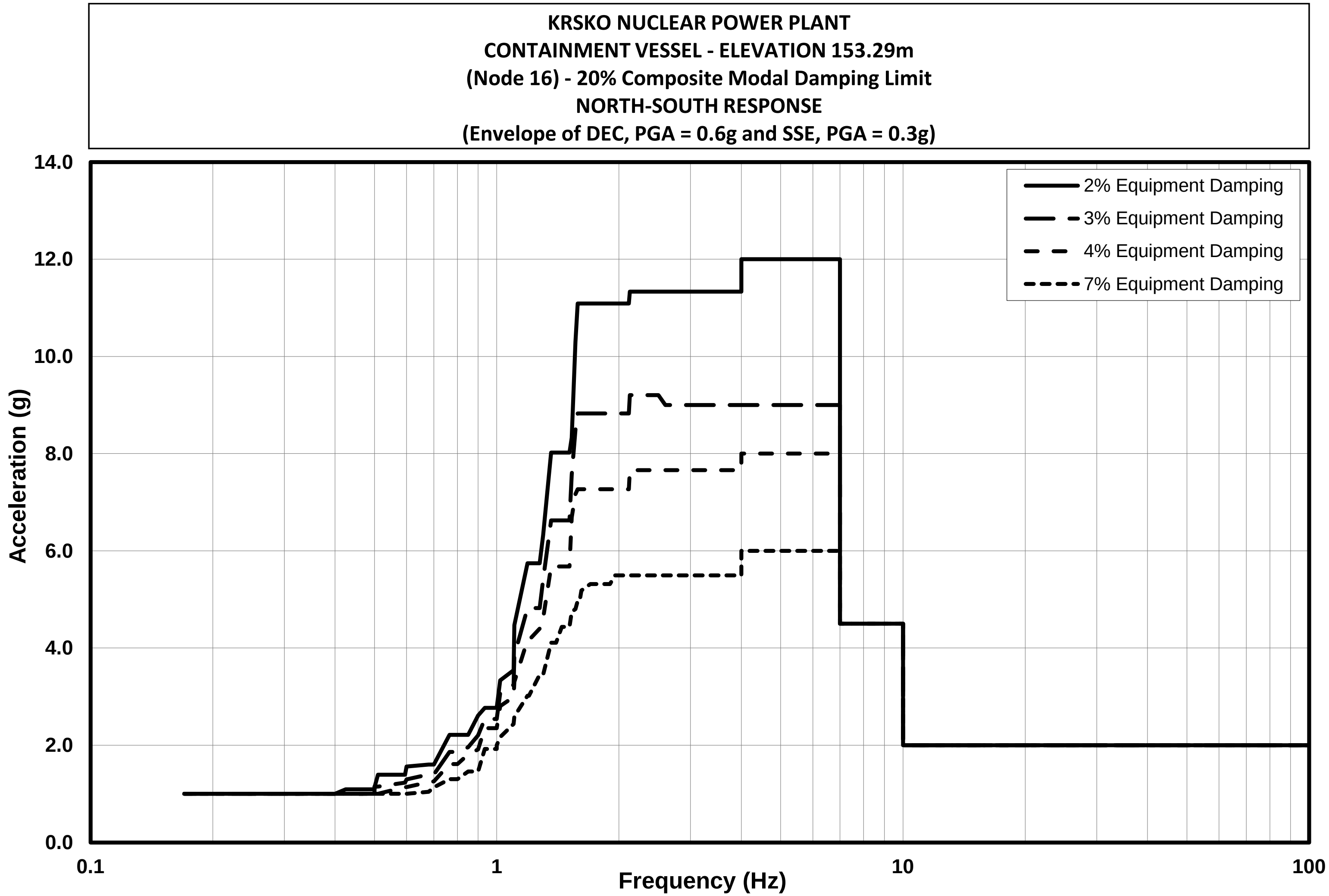
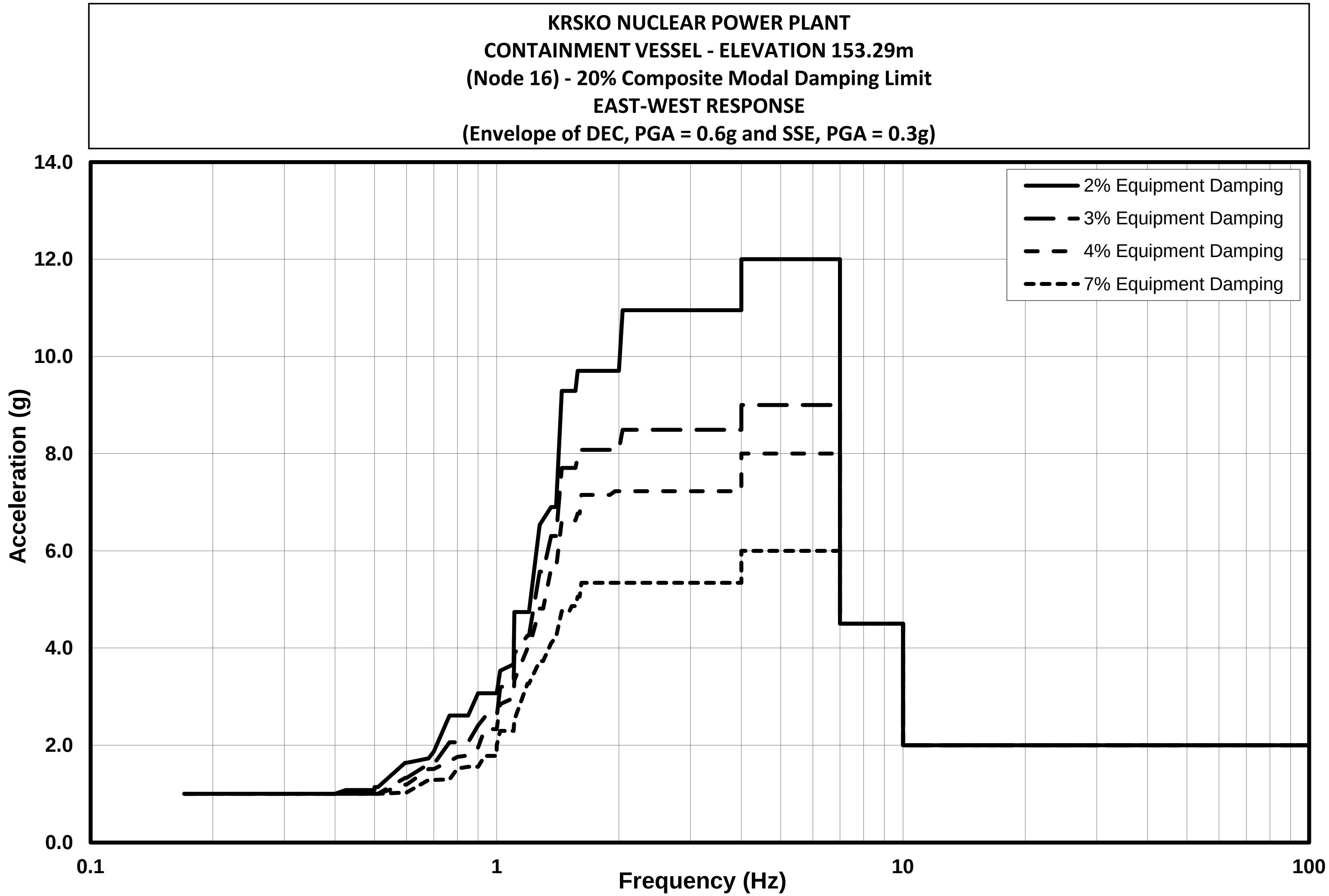

KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 153.29m
(Node 16) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C19


KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 153.29m
(Node 16) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
Frequency (Hz)
0.1
1
10
100

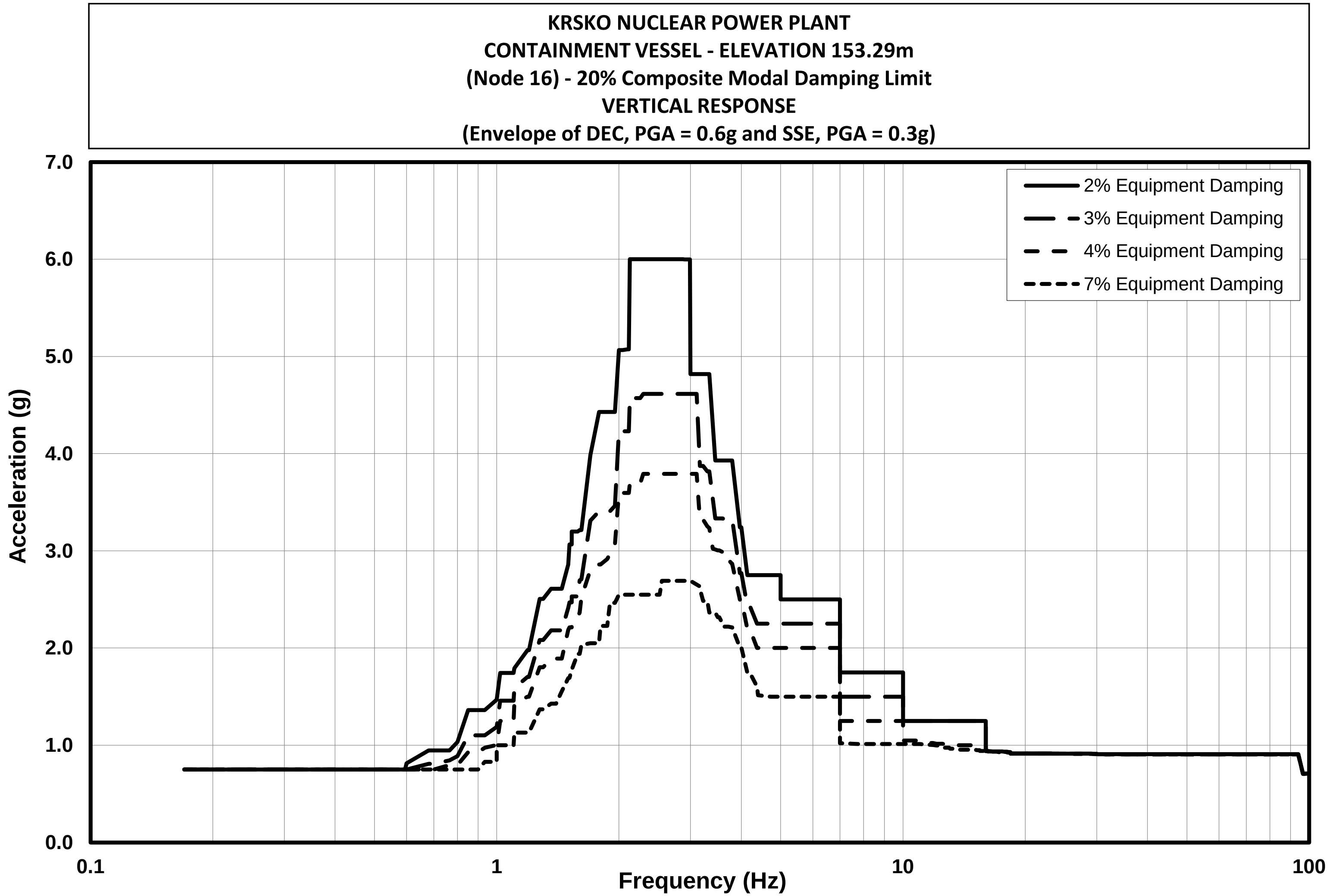
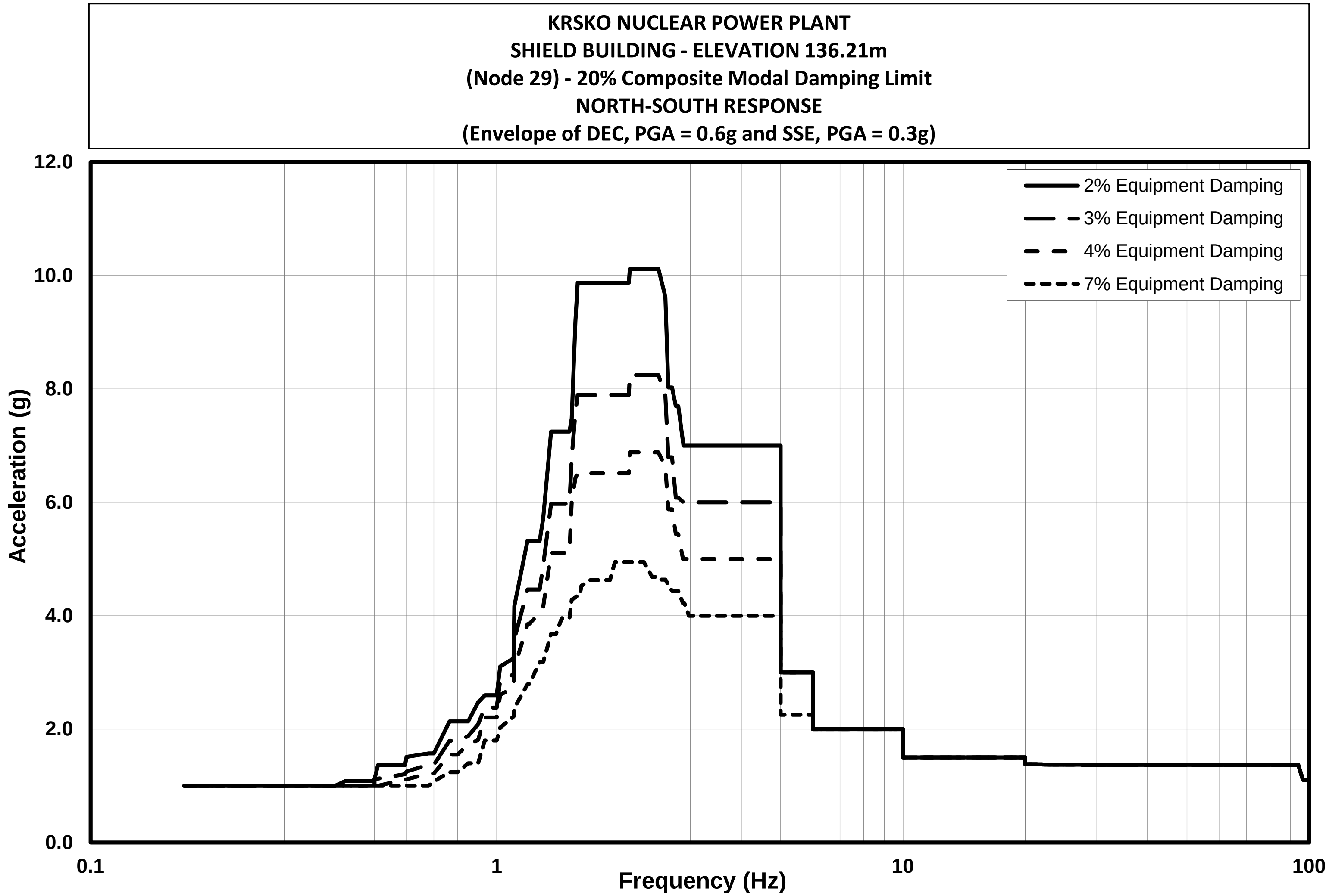

KRSKO NUCLEAR POWER PLANT
CONTAINMENT VESSEL - ELEVATION 153.29m
(Node 16) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C21


KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 136.21m
(Node 29) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

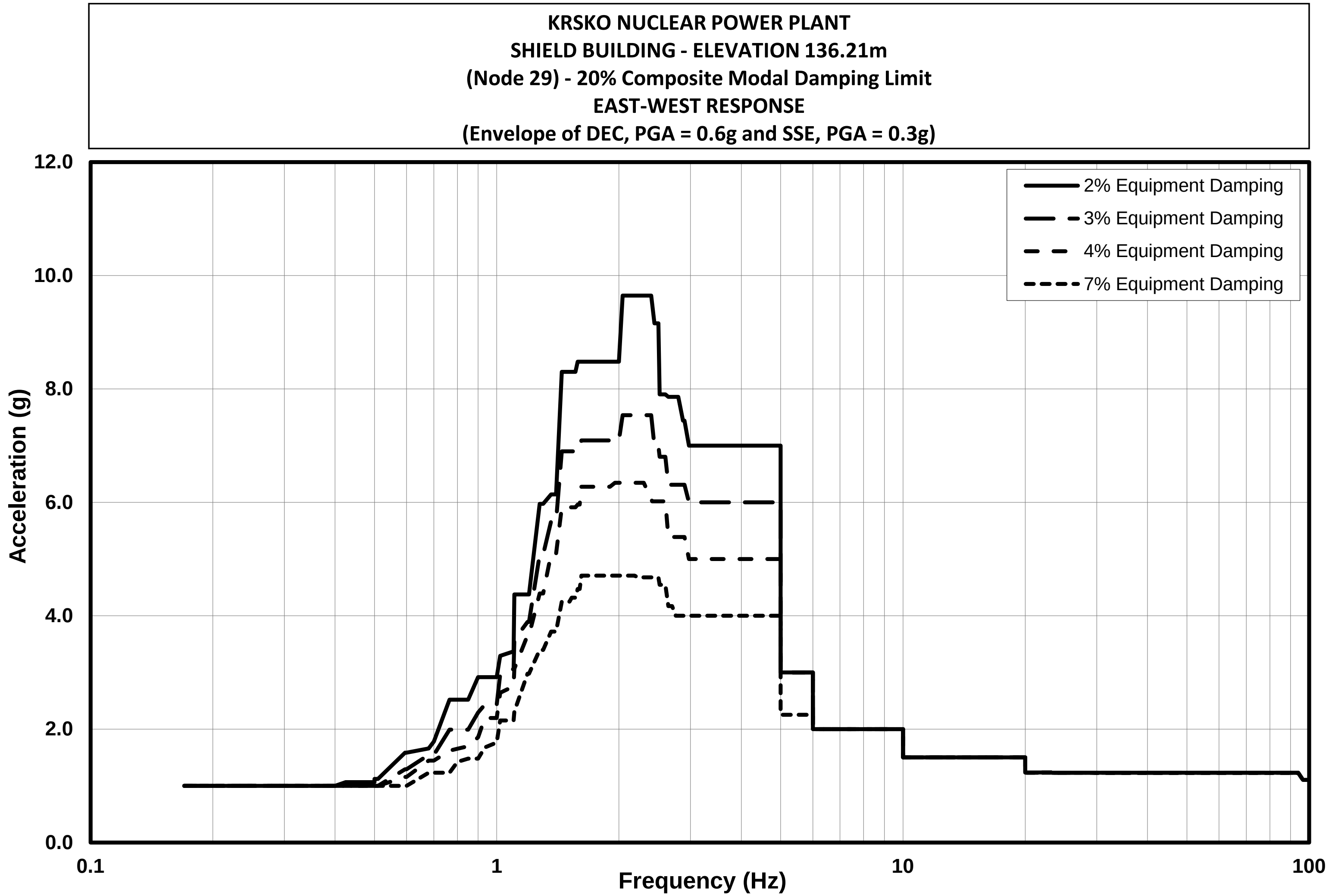
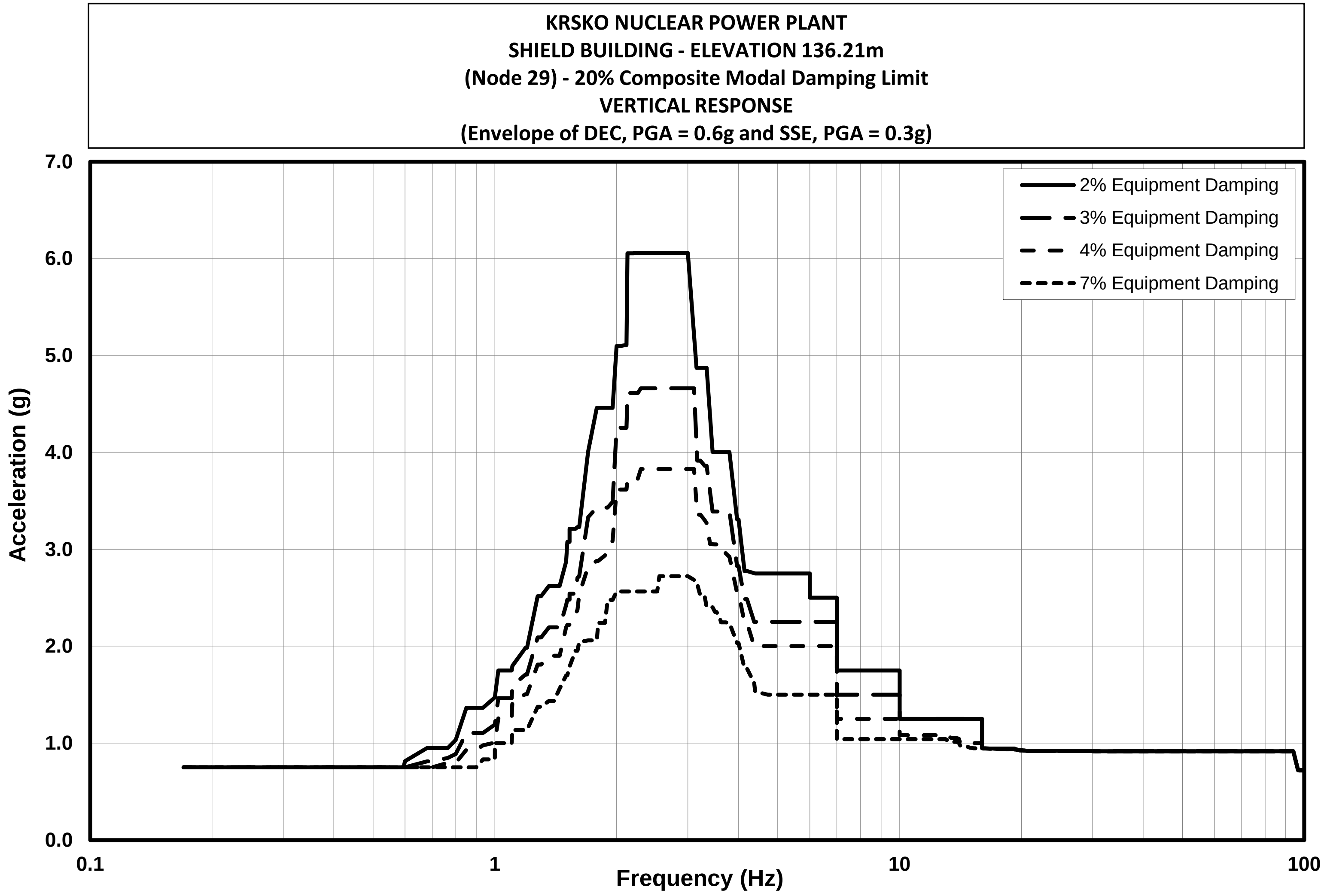

KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 136.21m
(Node 29) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

Figure C23


KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 136.21m
(Node 29) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100

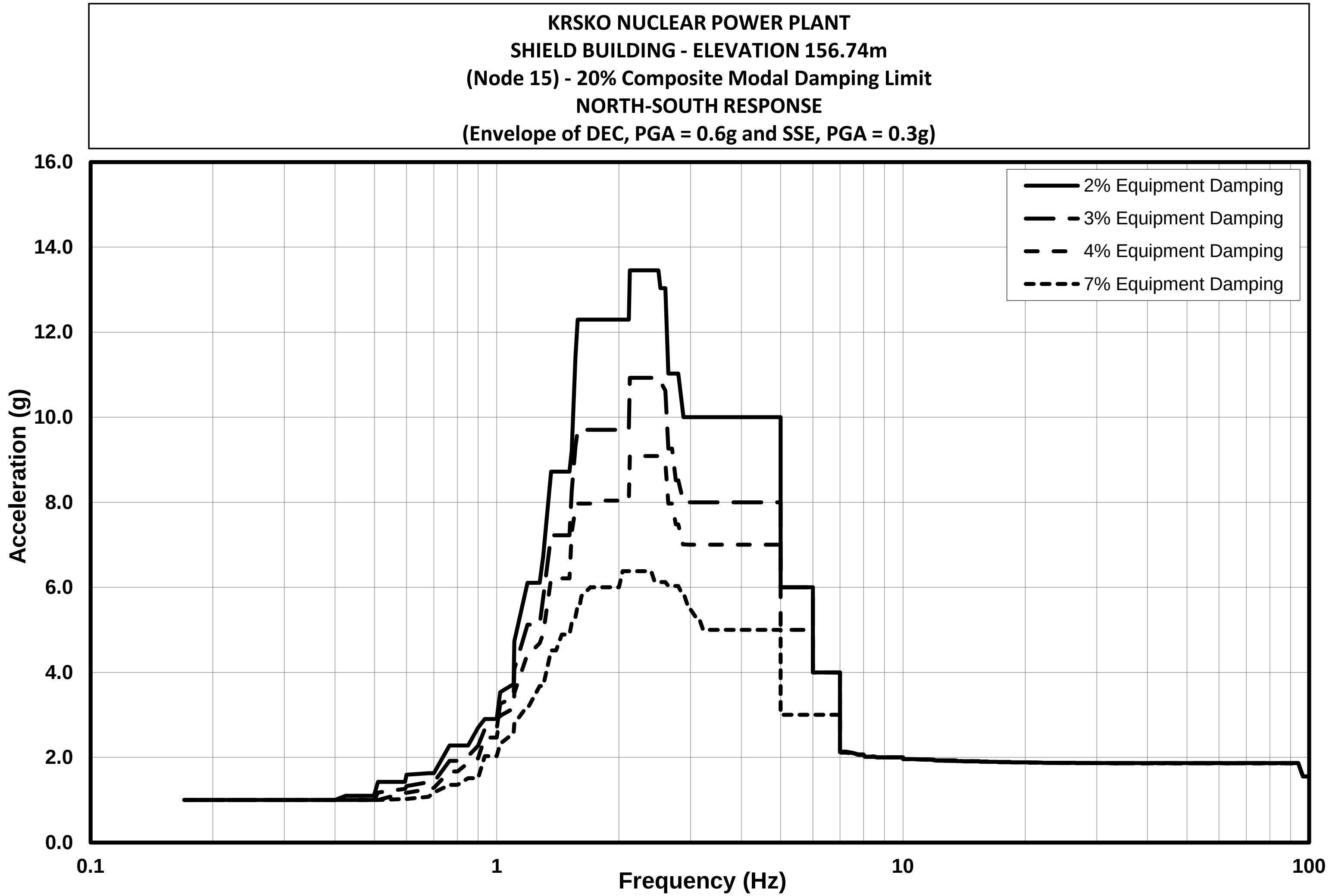
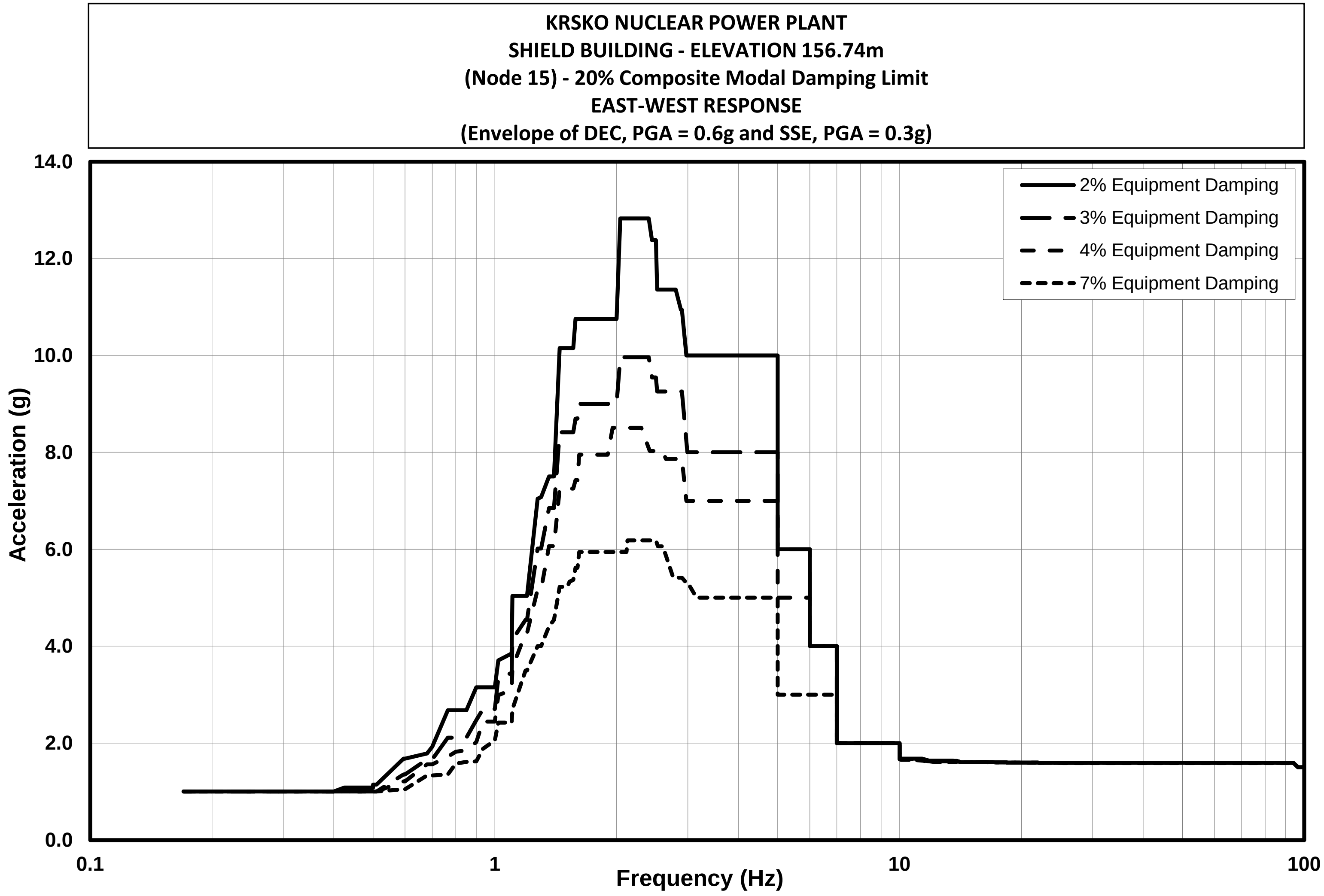

KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 156.74m
(Node 15) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C25


KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 156.74m
(Node 15) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

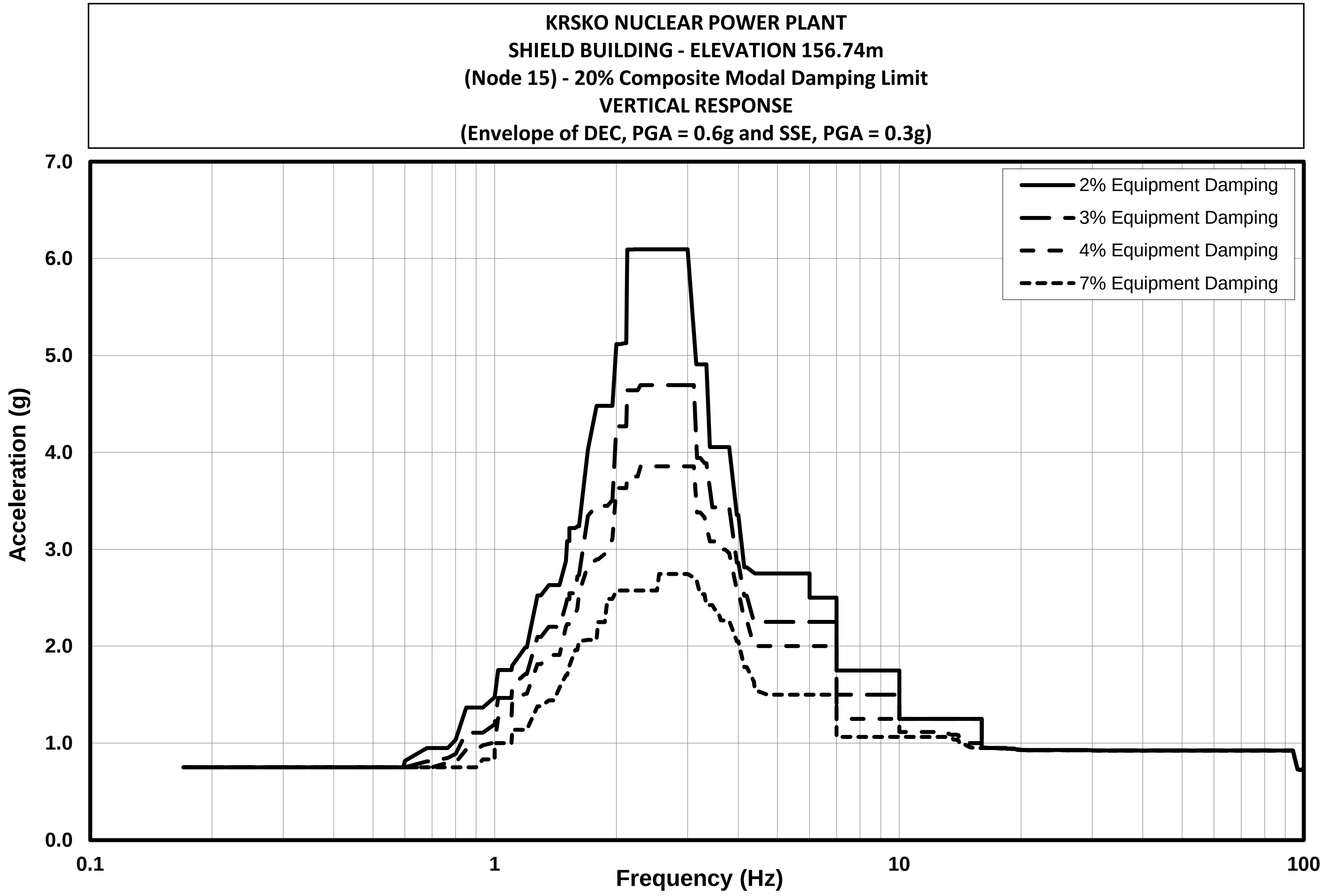
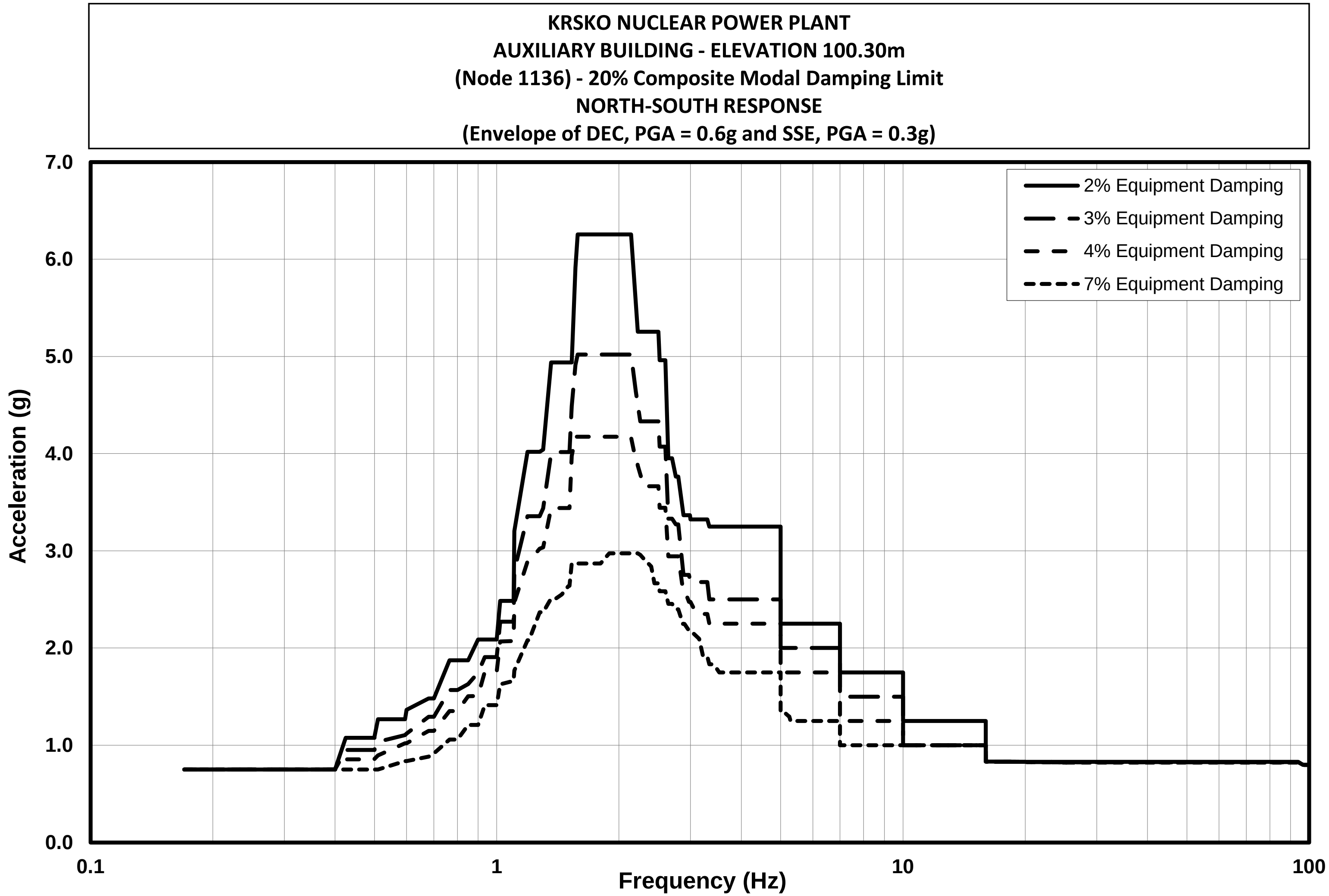
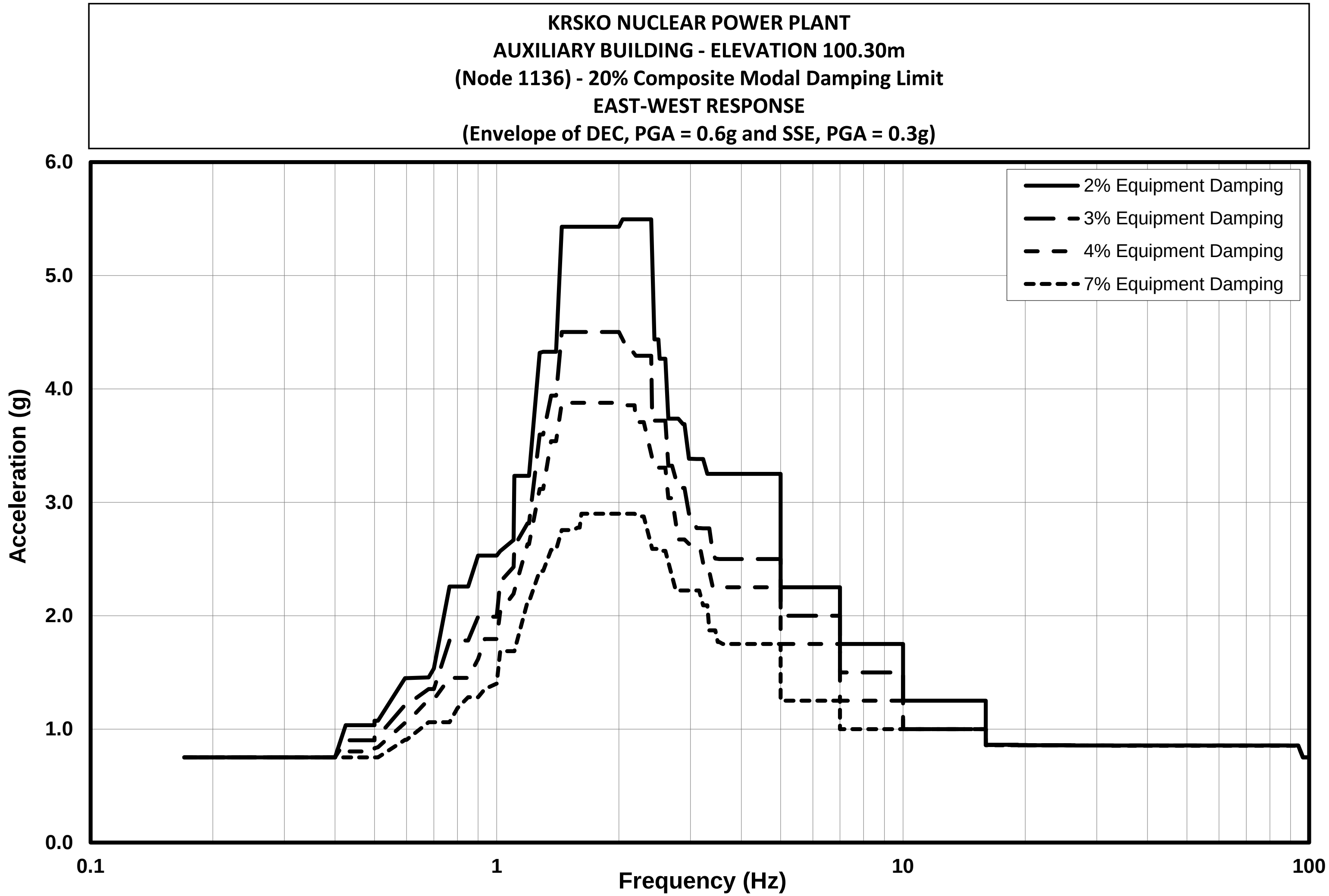
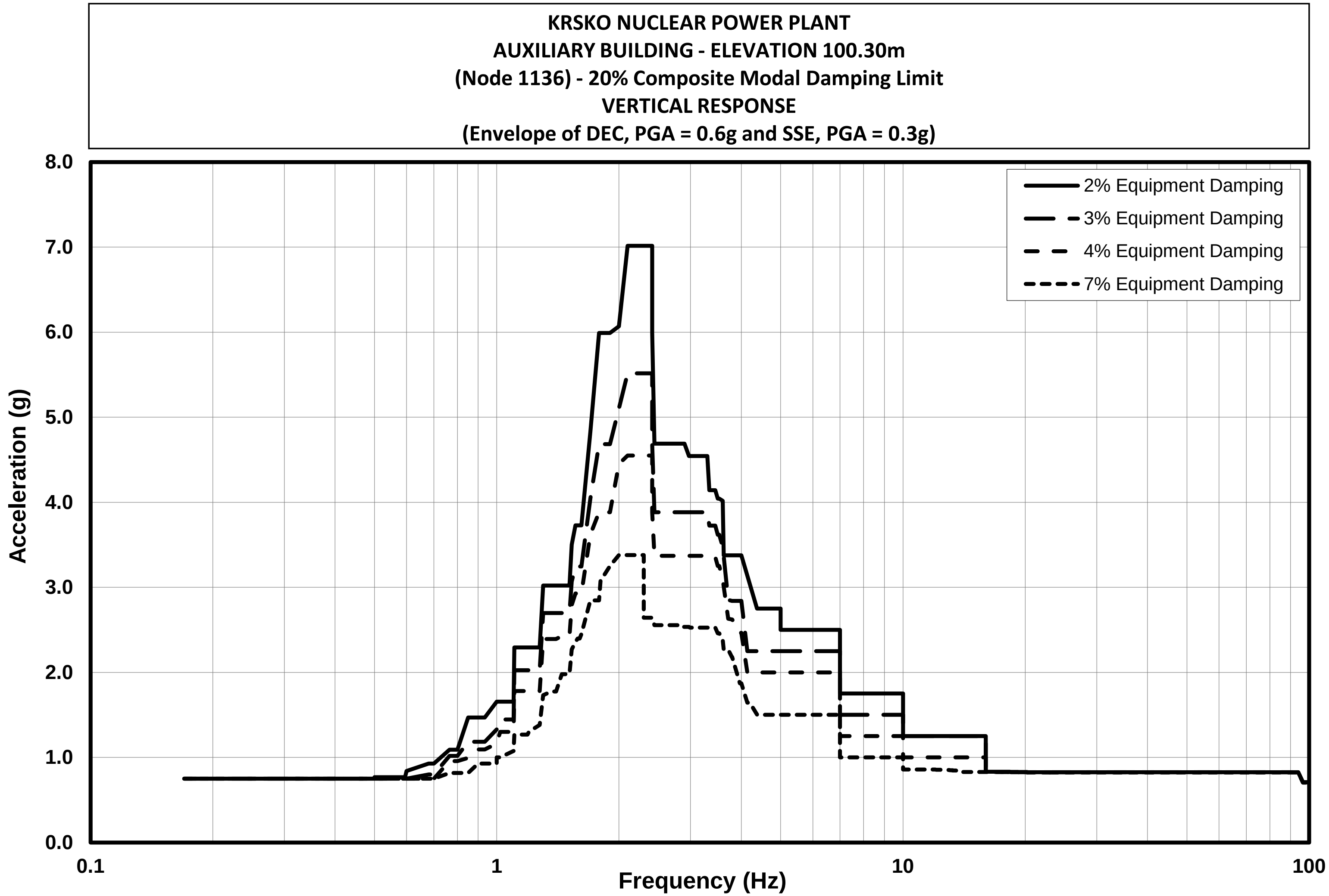
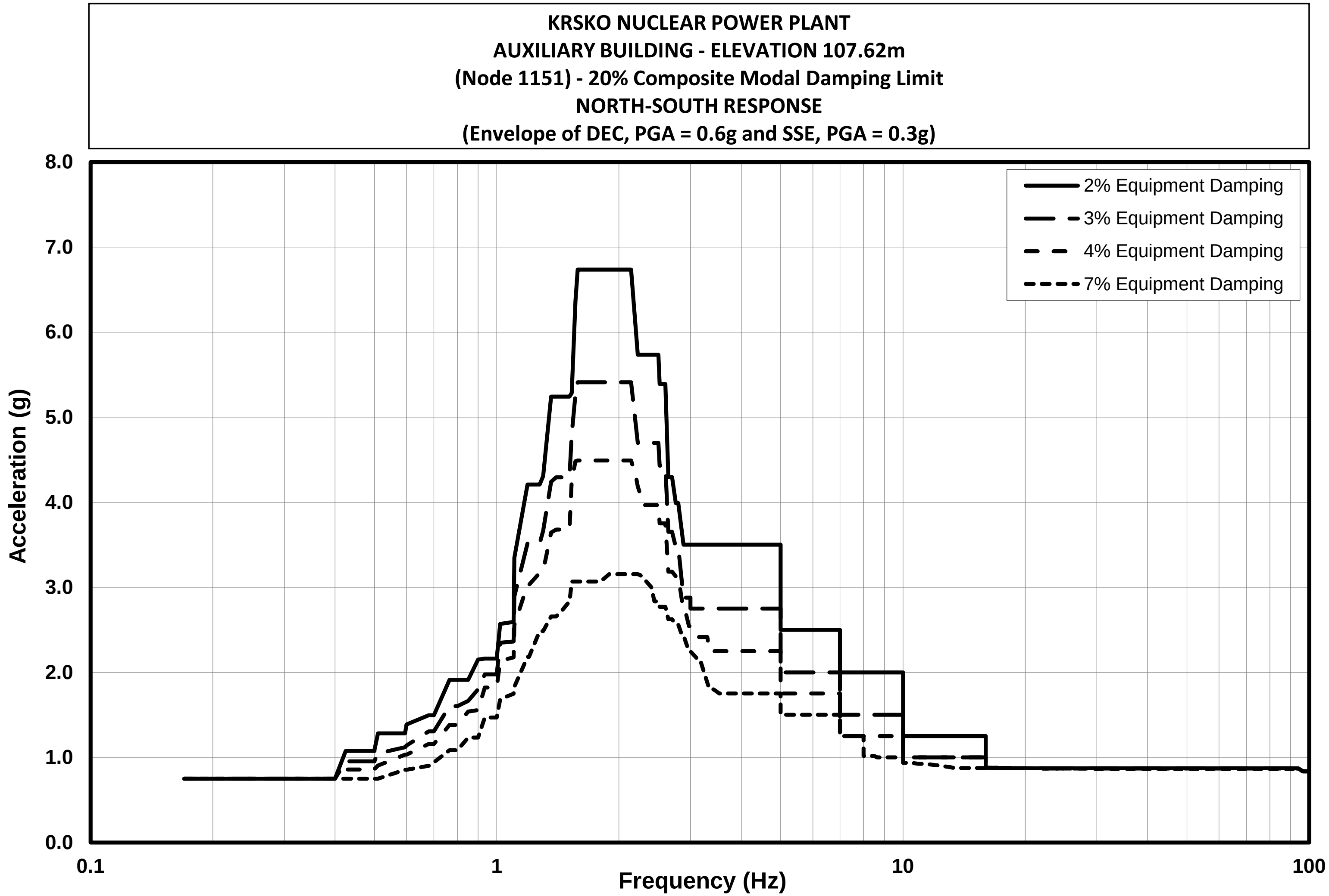

KRSKO NUCLEAR POWER PLANT
SHIELD BUILDING - ELEVATION 156.74m
(Node 15) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C27


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 100.30m
(Node 1136) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 100.30m
(Node 1136) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 100.30m
(Node 1136) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 107.62m
(Node 1151) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

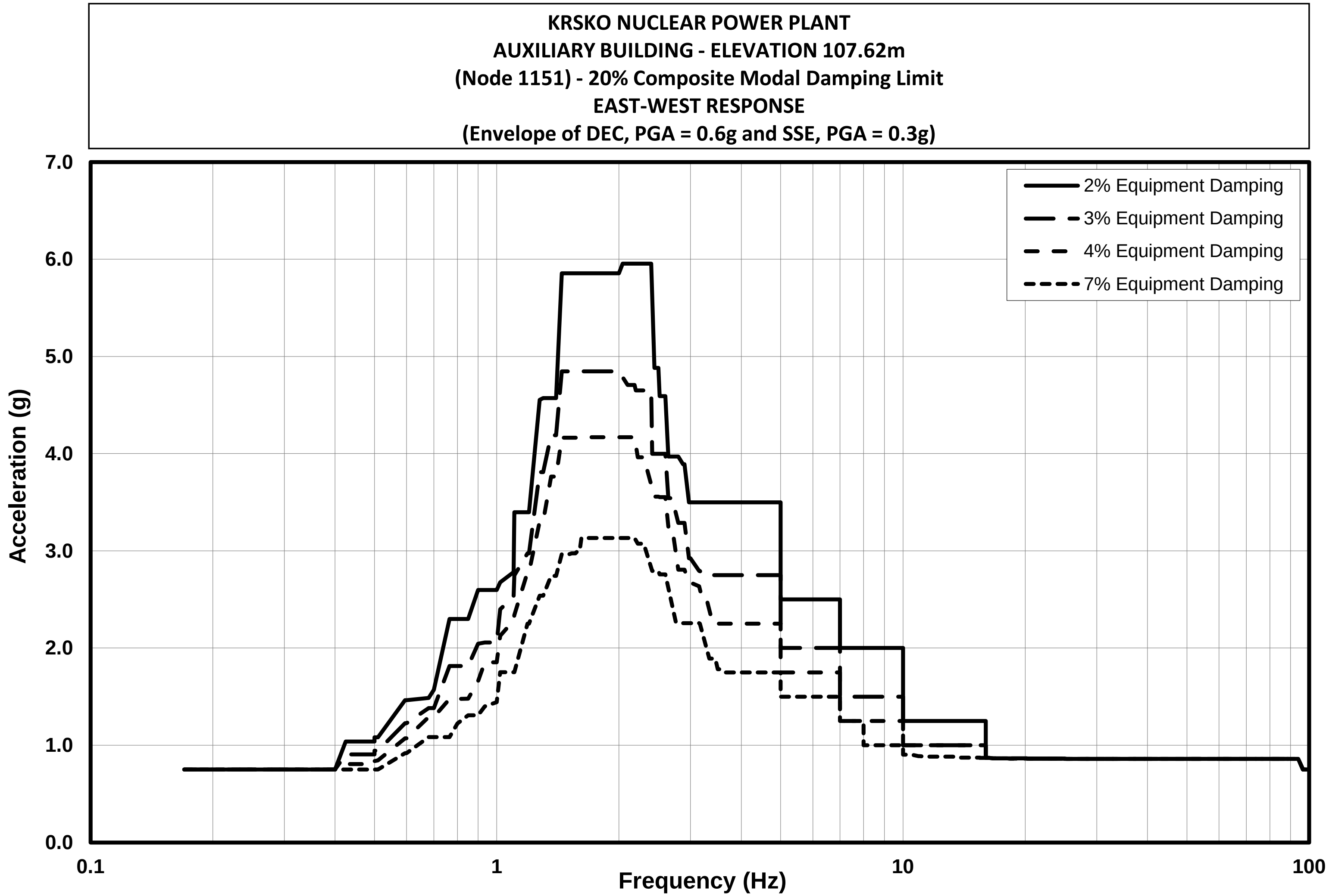
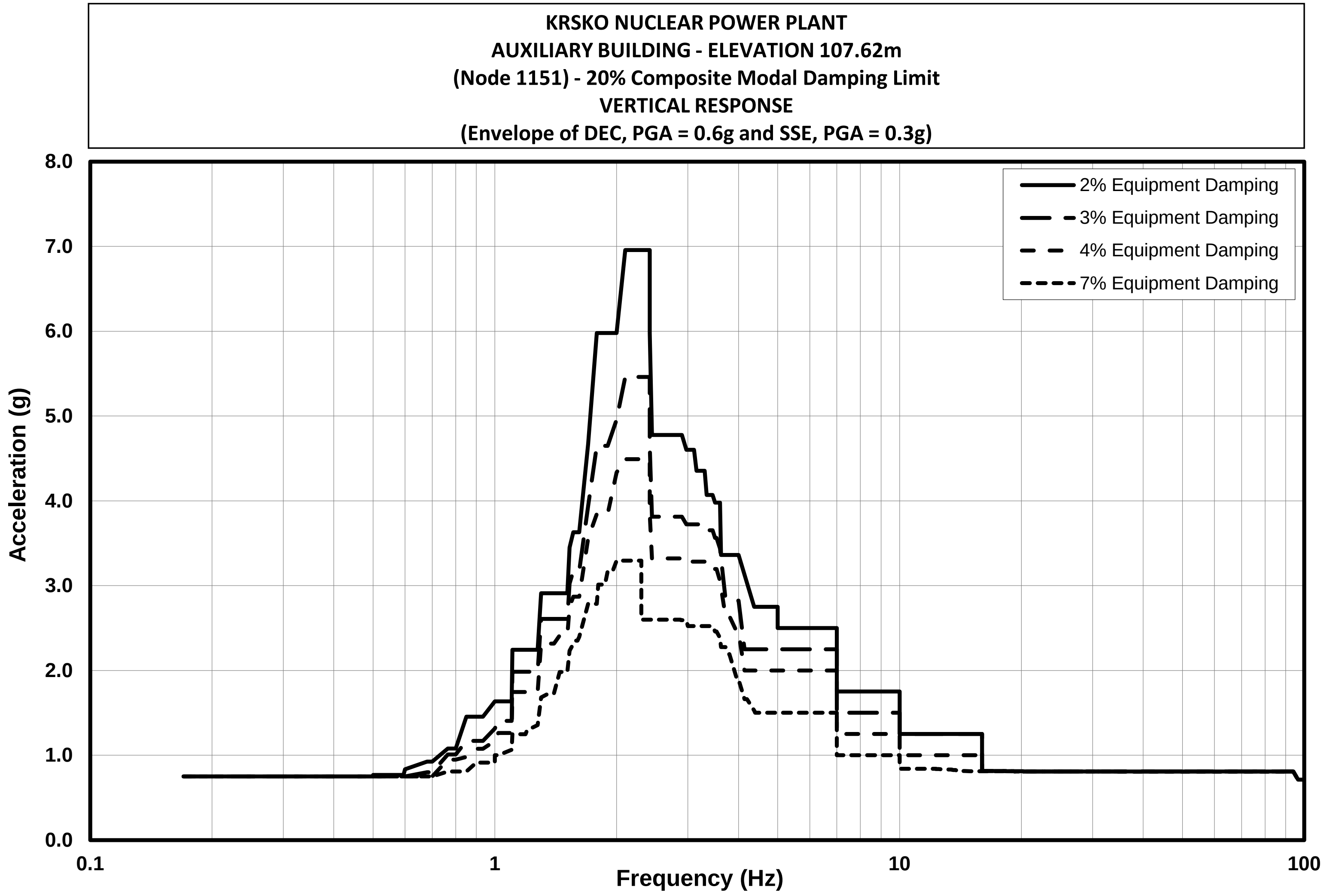
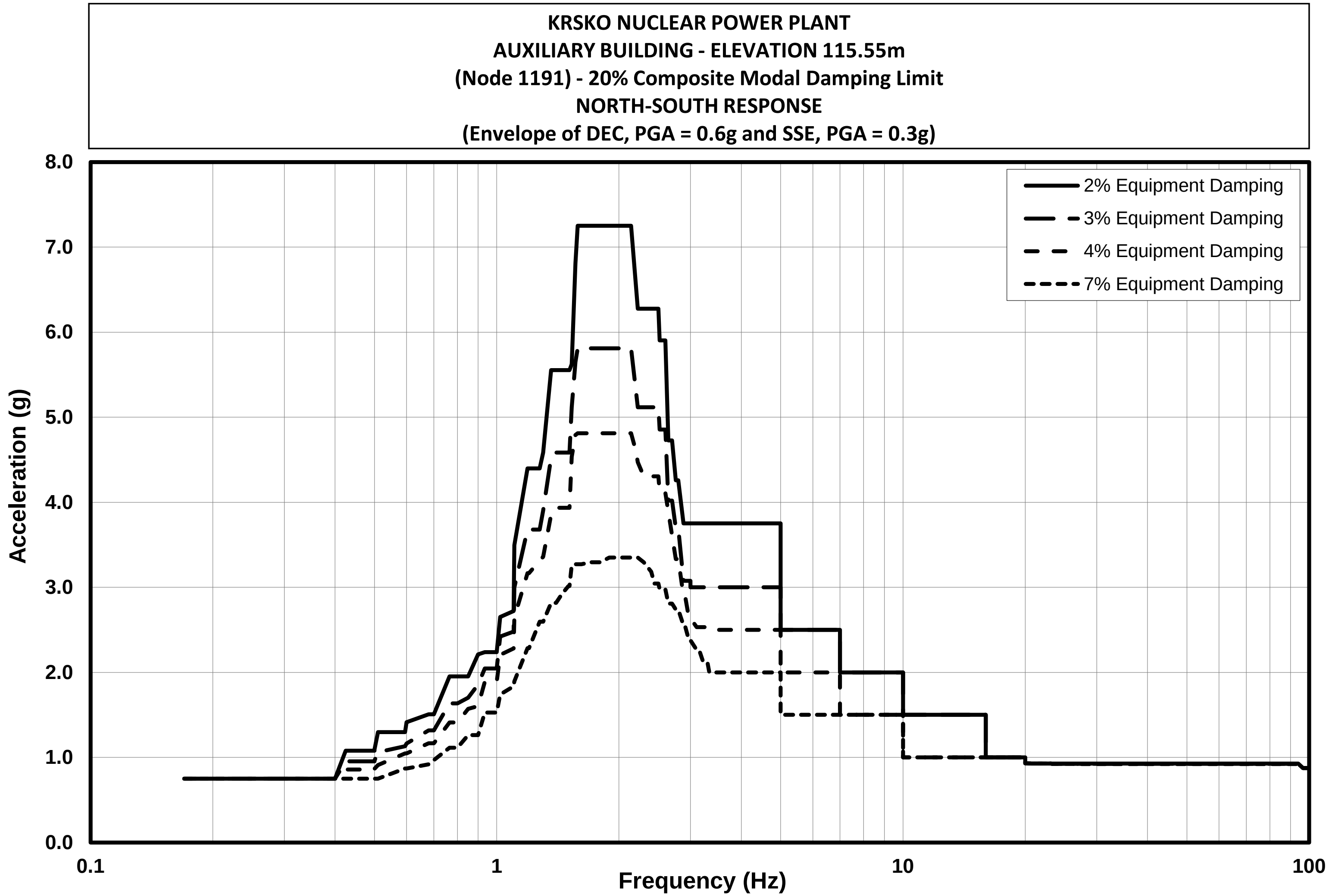
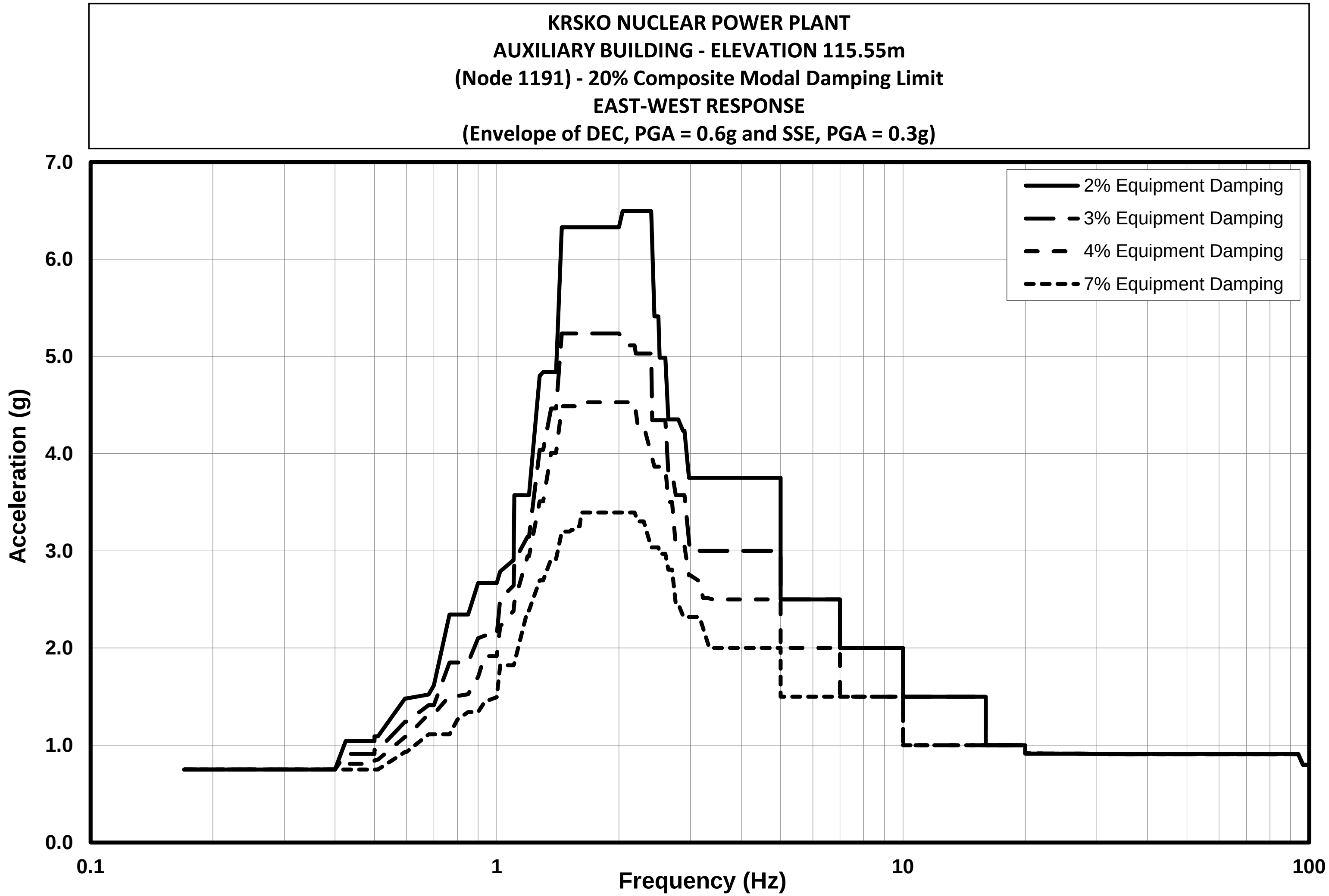
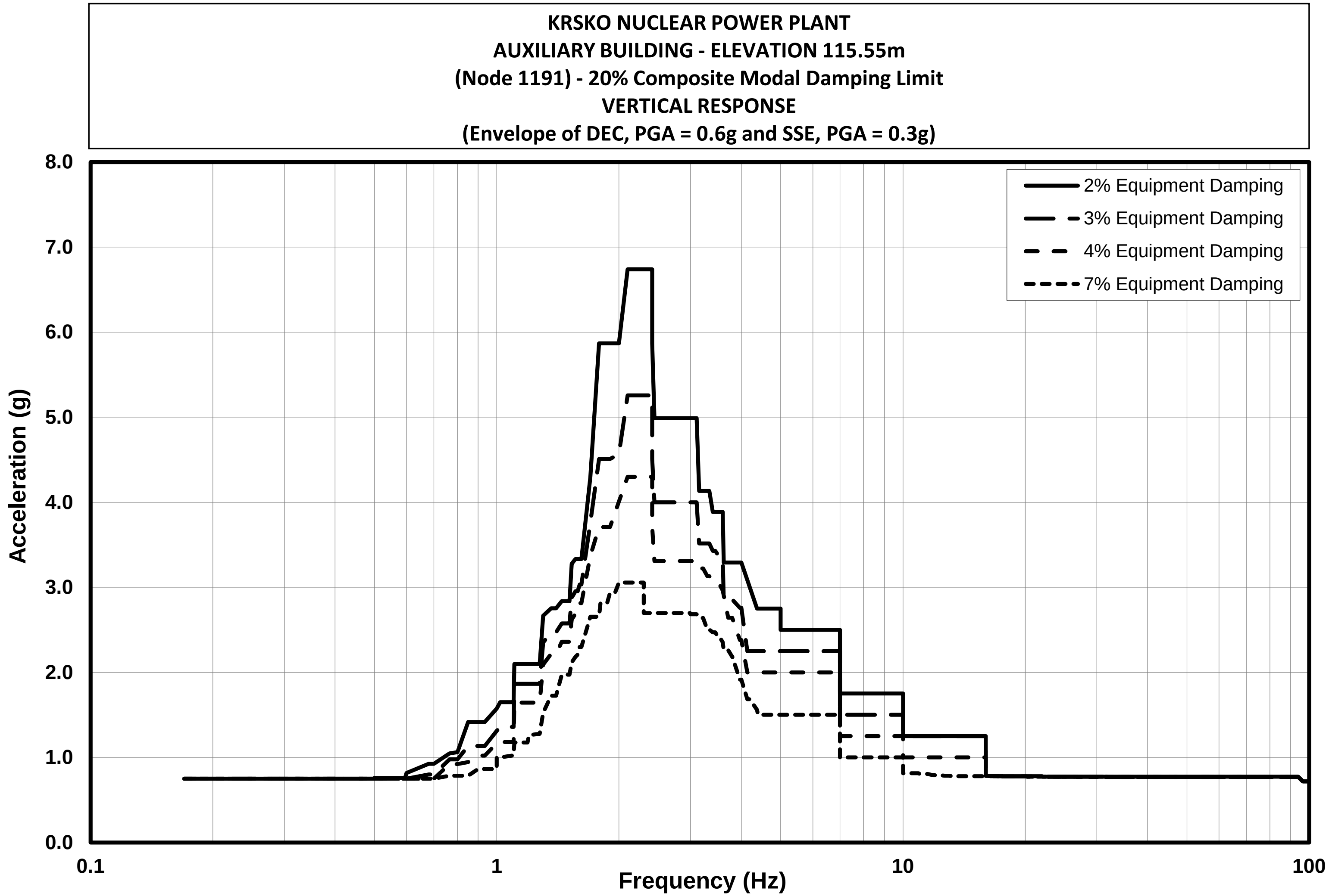

KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 107.62m
(Node 1151) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C32


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 107.62m
(Node 1151) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 115.55m
(Node 1191) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 115.55m
(Node 1191) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 115.55m
(Node 1191) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100

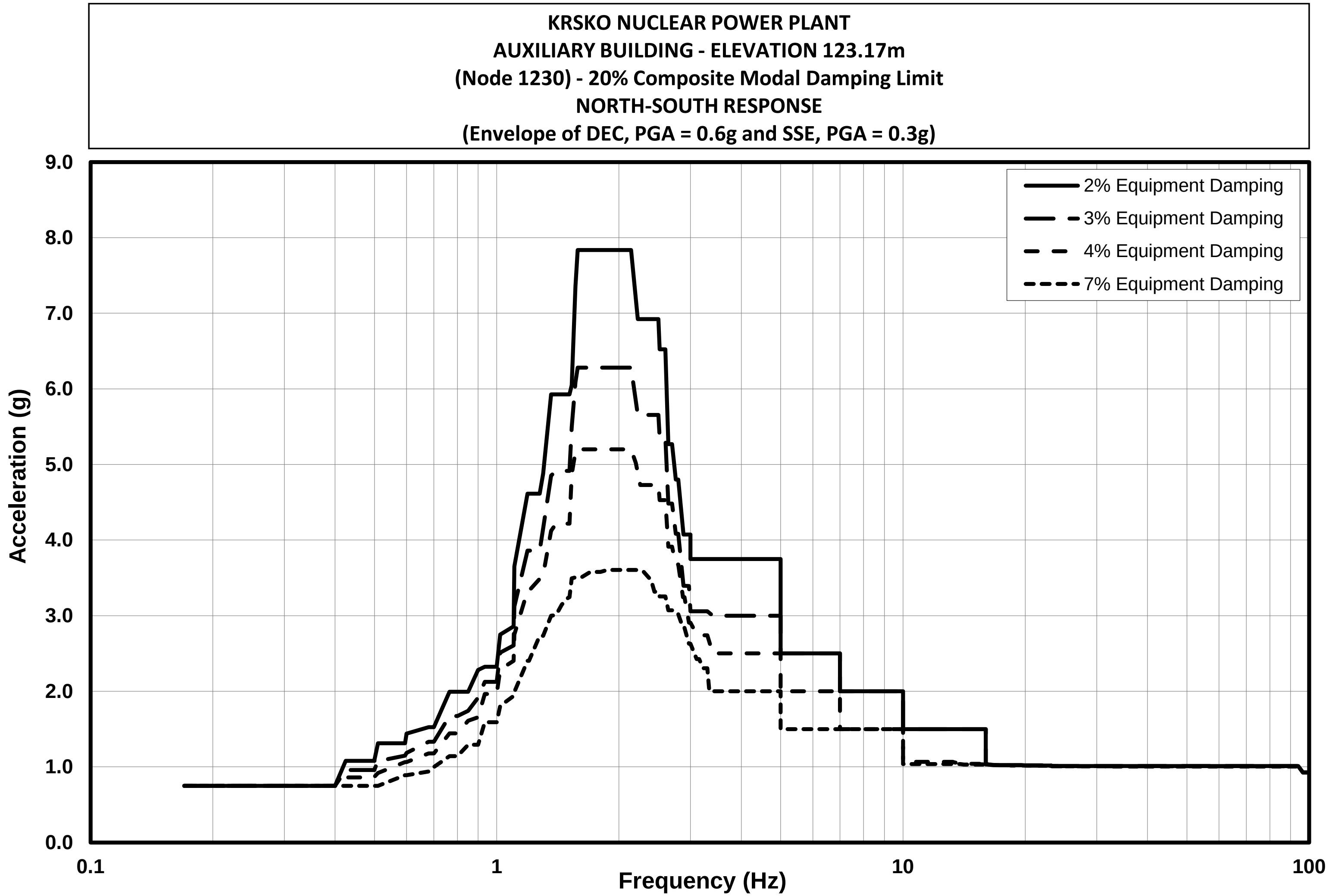

KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 123.17m
(Node 1230) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C37

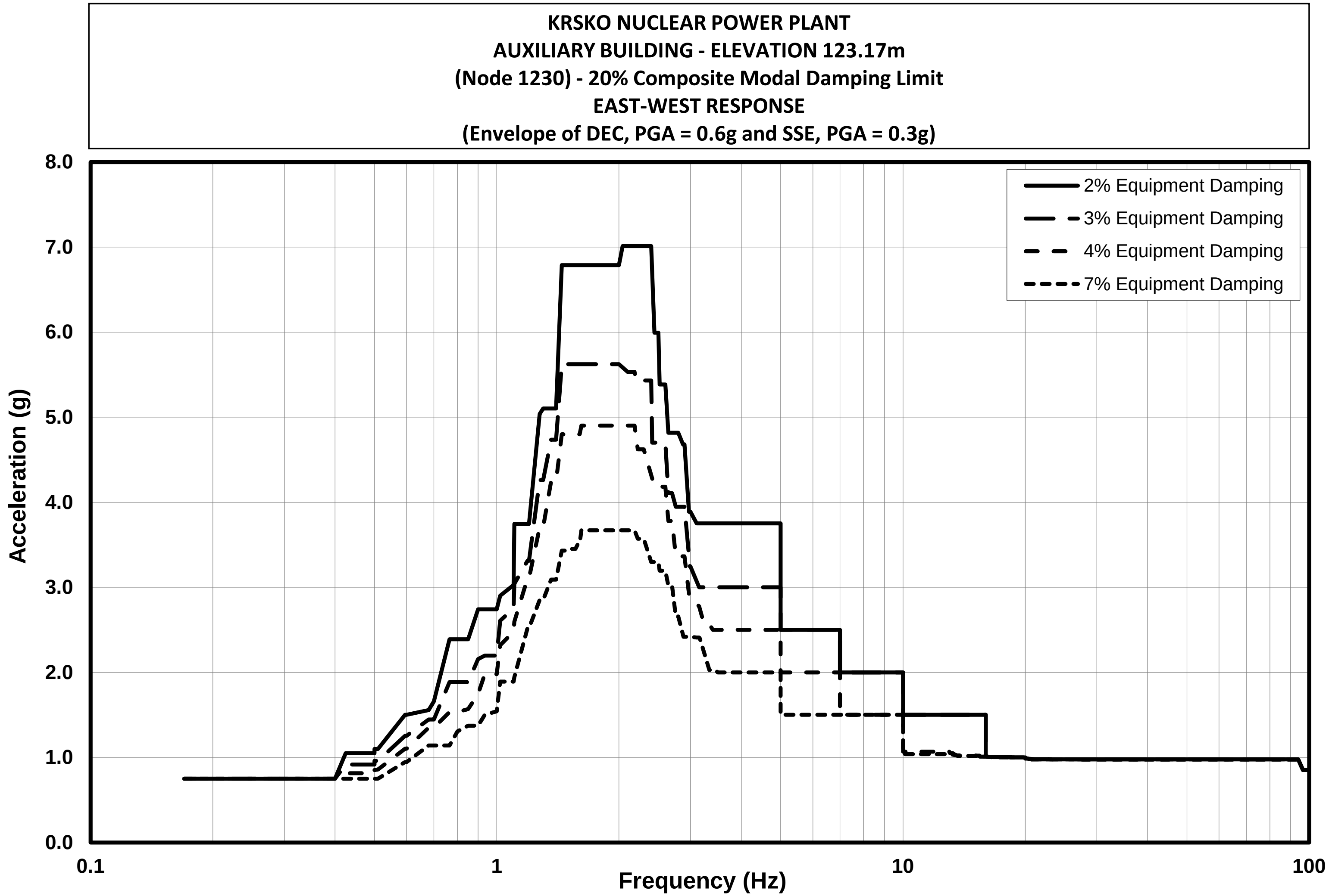
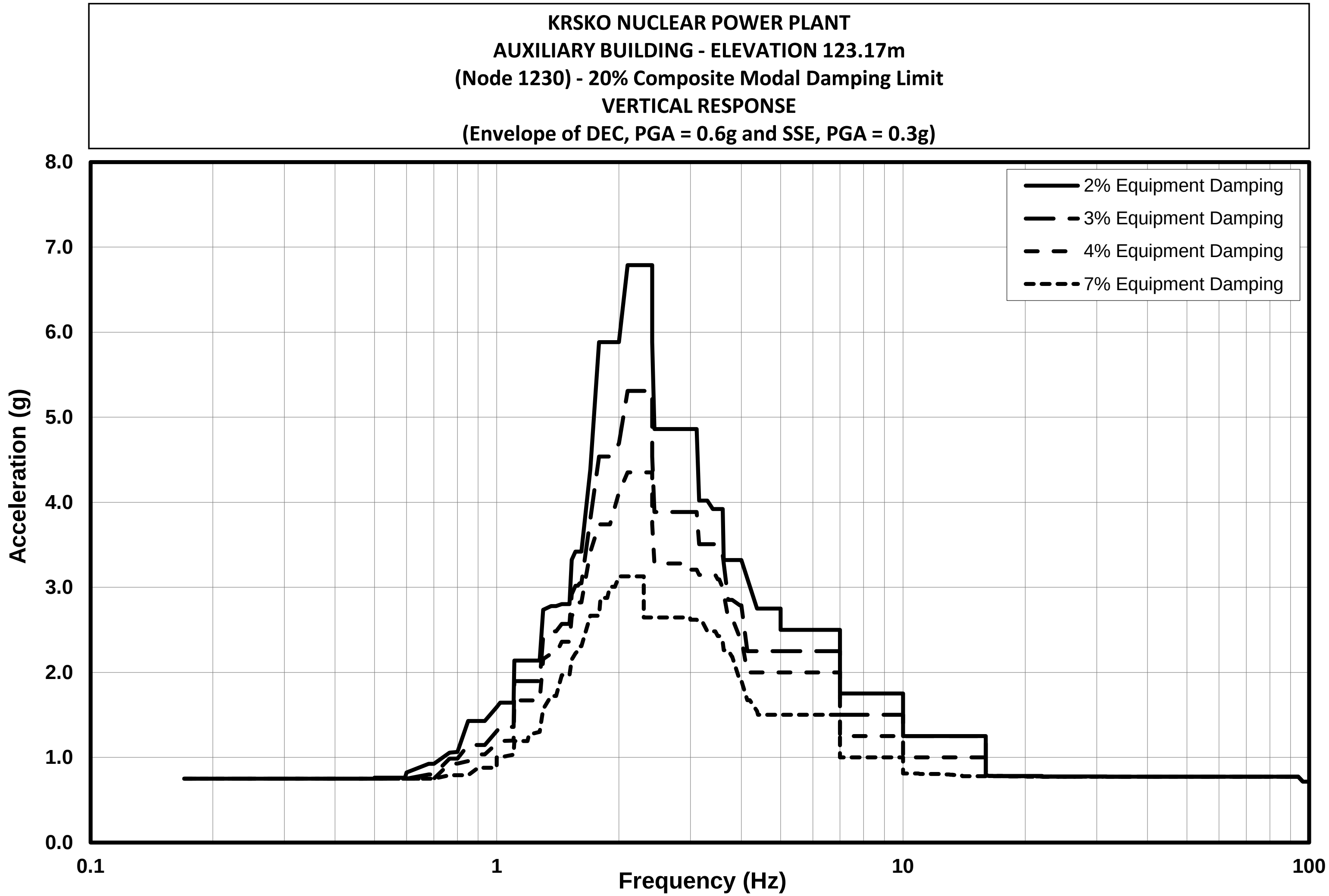

KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 123.17m
(Node 1230) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C38



KRSKO NUCLEAR POWER PLANT
AUXILIARY BUILDING - ELEVATION 123.17m
(Node 1230) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C39

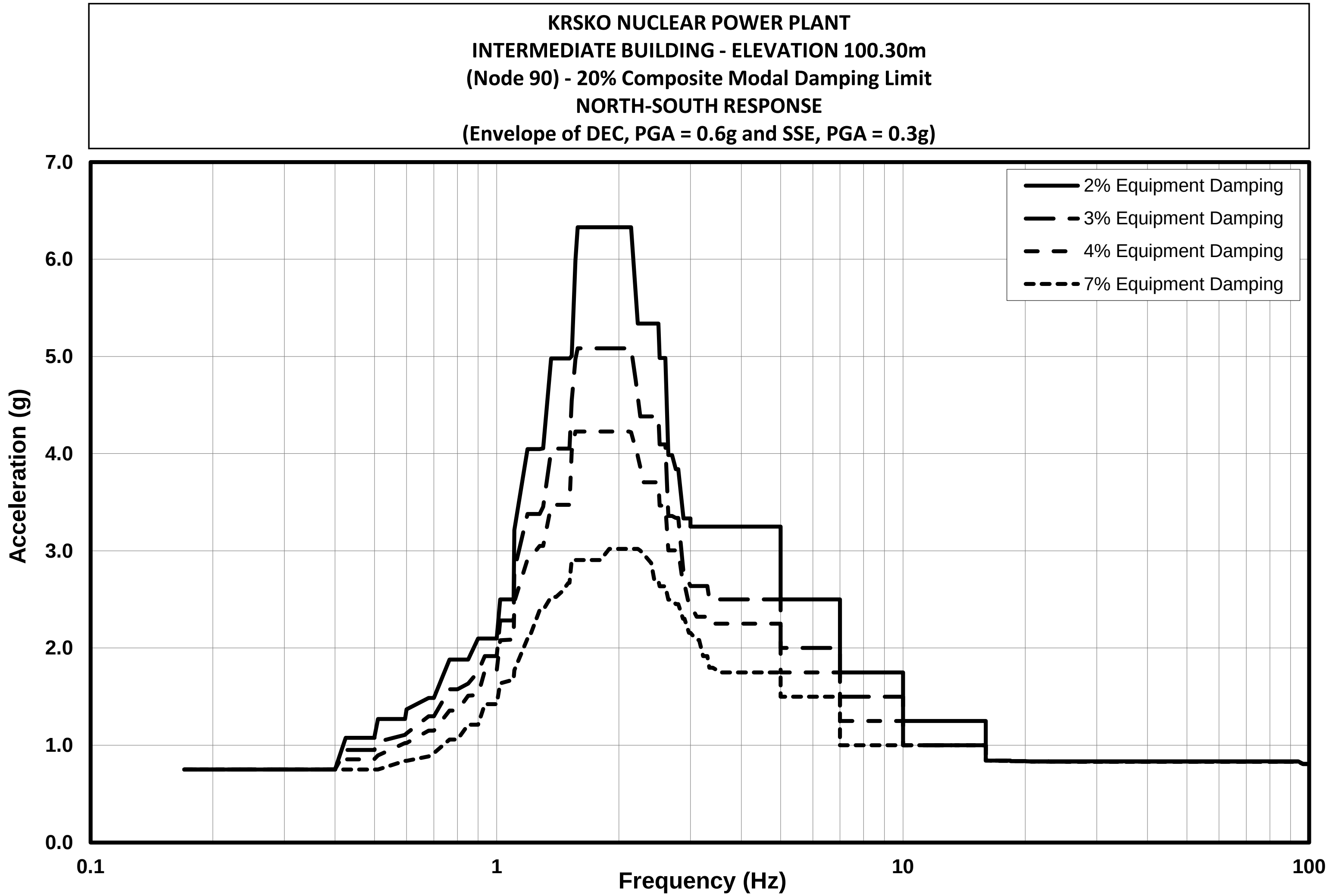

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 100.30m
(Node 90) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100
Frequency (Hz)

Figure C40

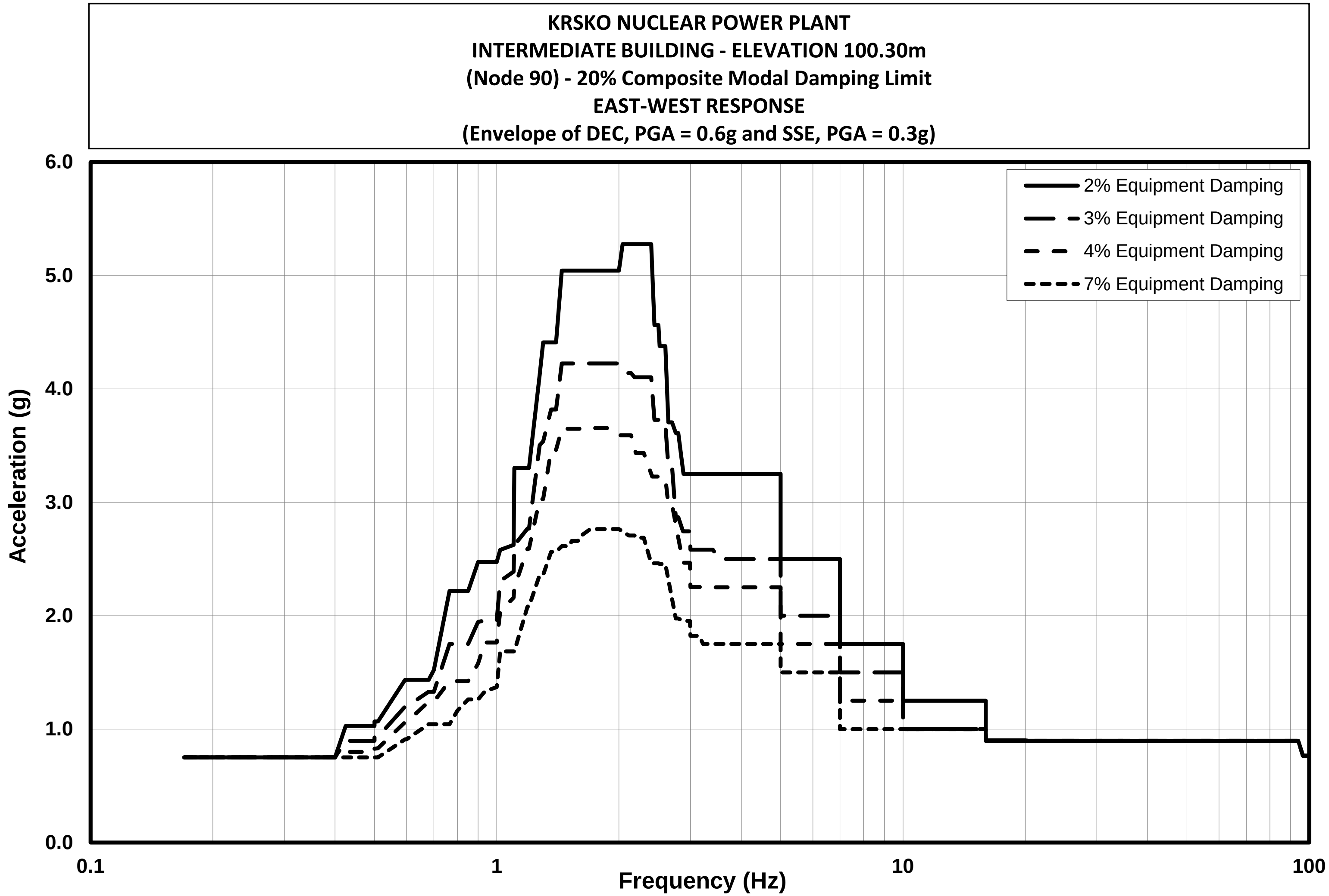

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 100.30m
(Node 90) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C41

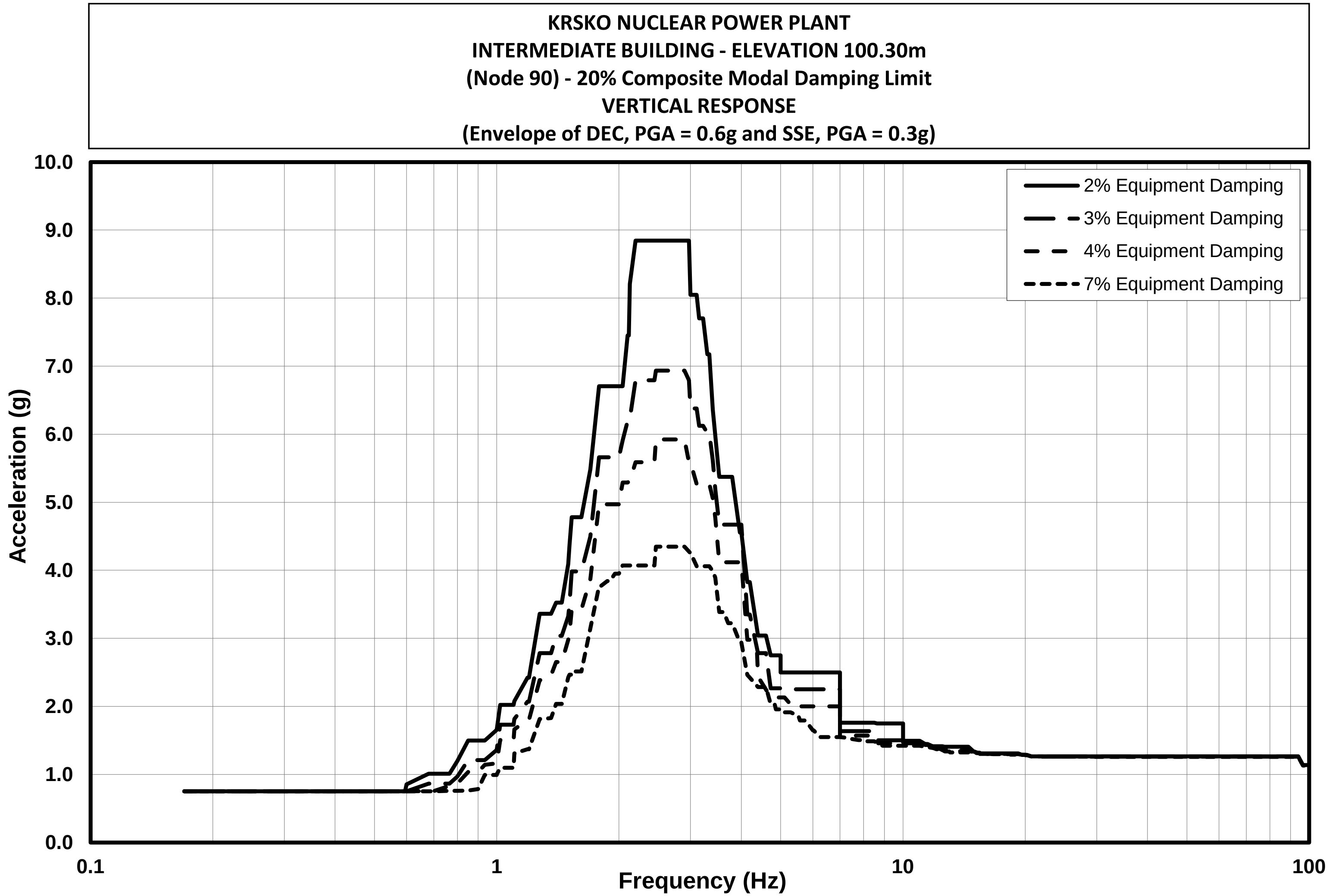
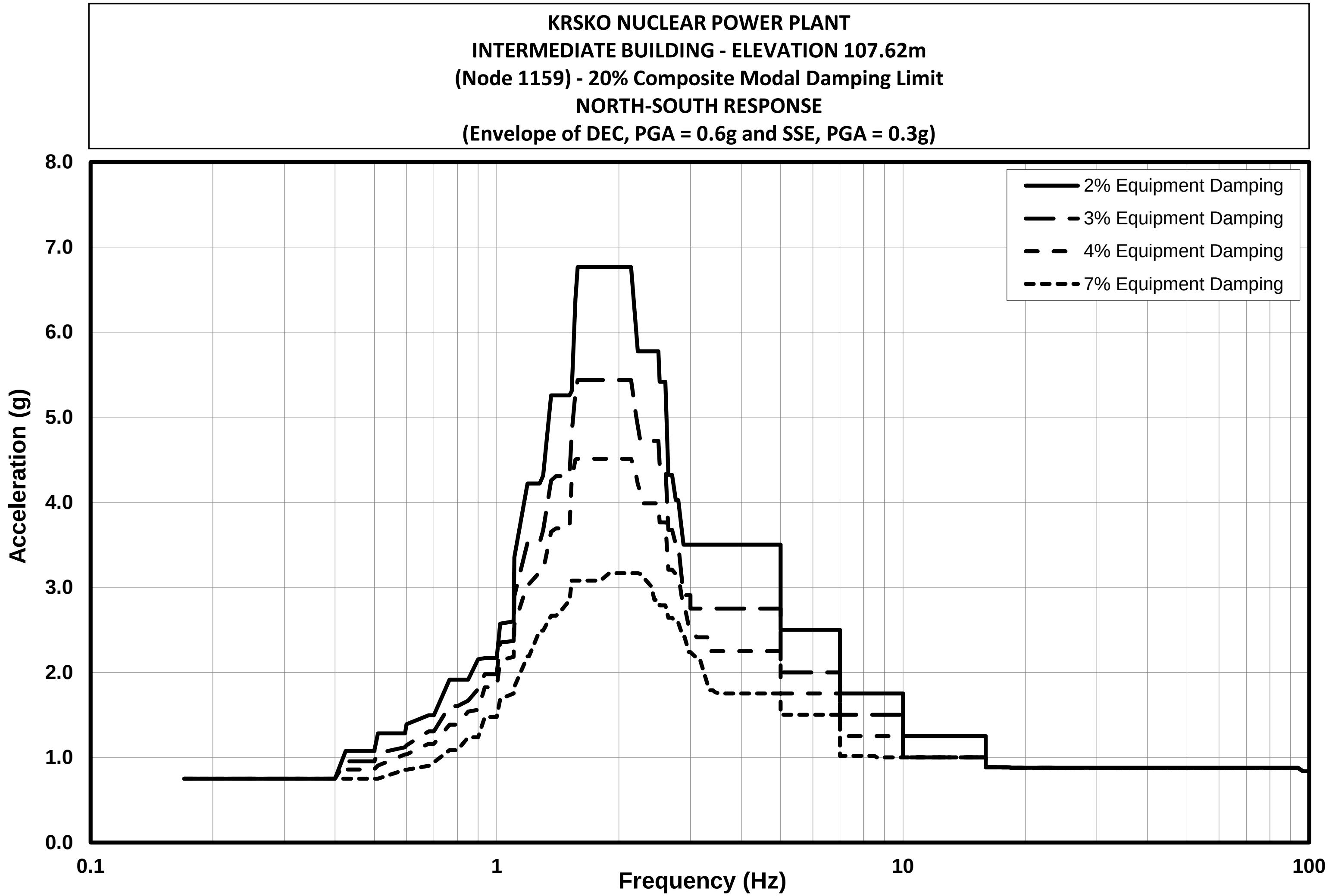
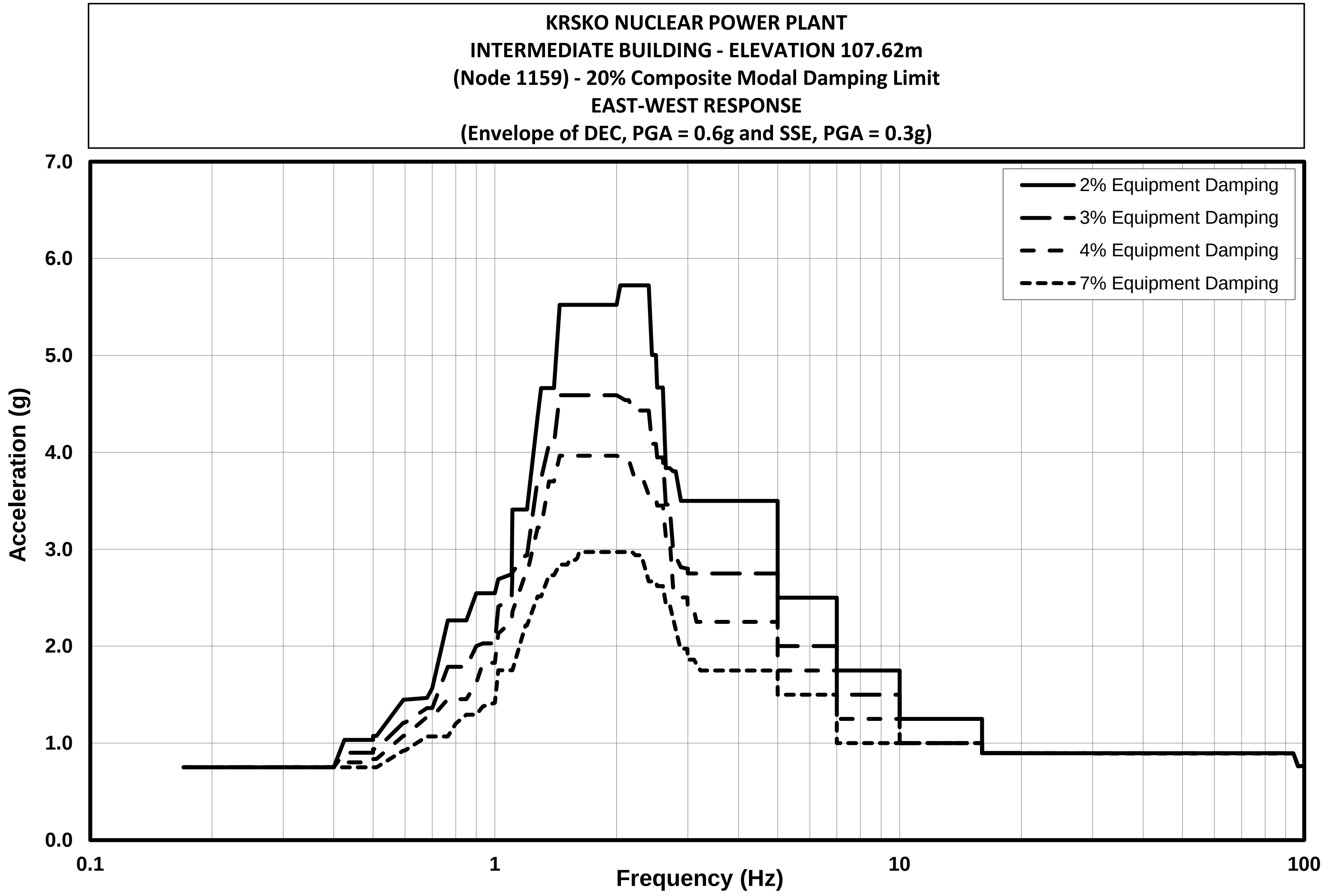

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 100.30m
(Node 90) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

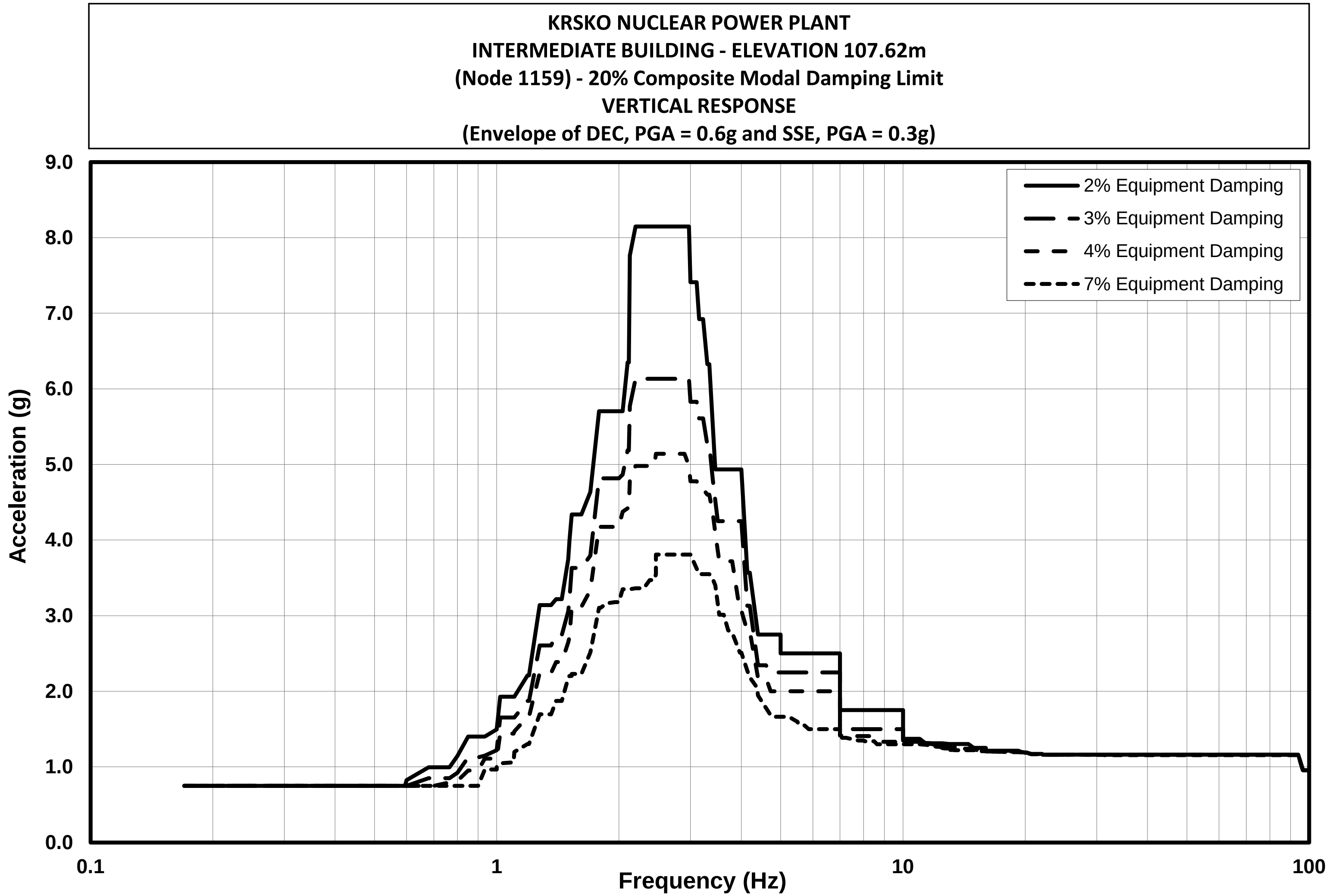
Figure C42


KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 107.62m
(Node 1159) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)



KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 107.62m
(Node 1159) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C44


KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 107.62m
(Node 1159) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

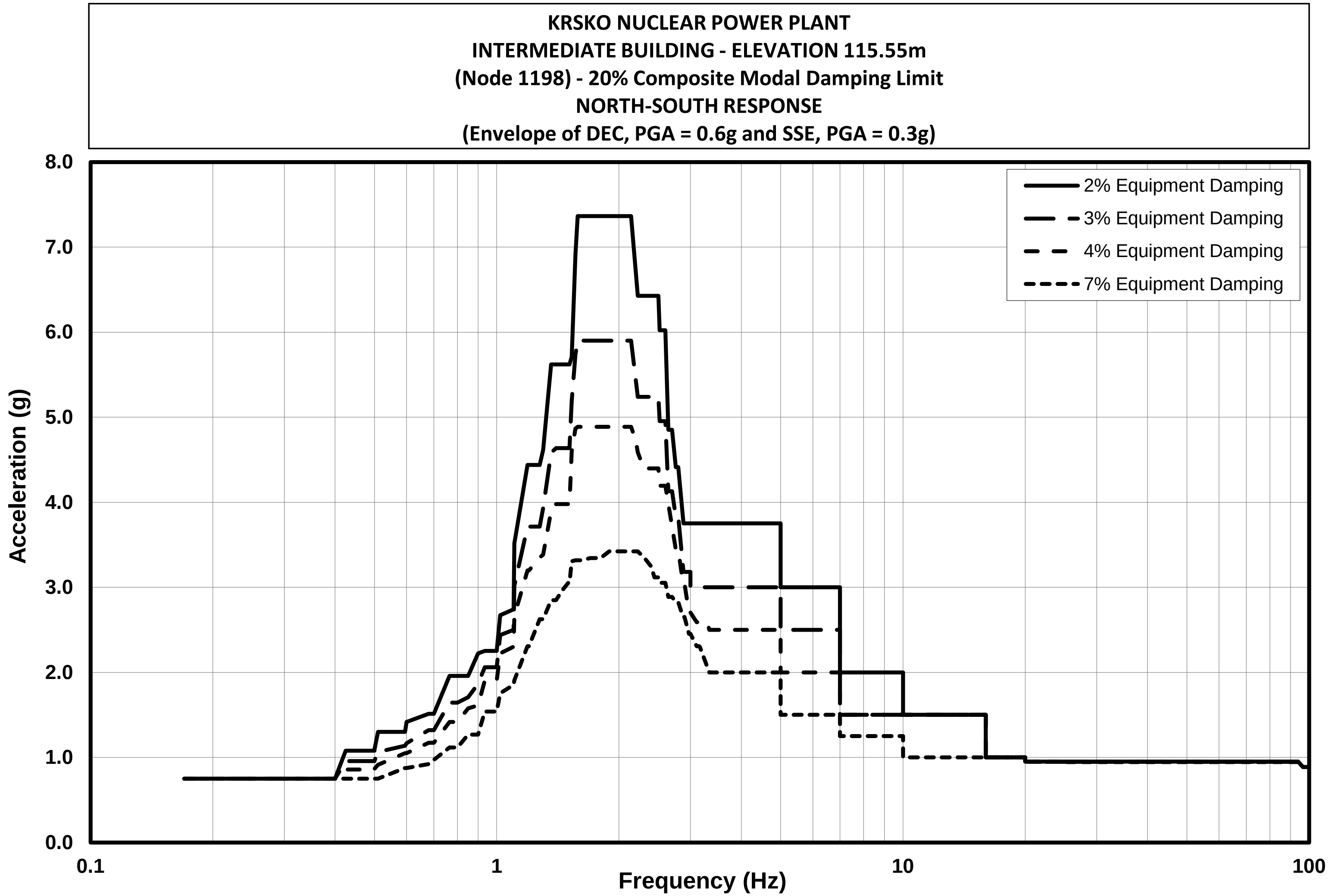

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 115.55m
(Node 1198) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C46

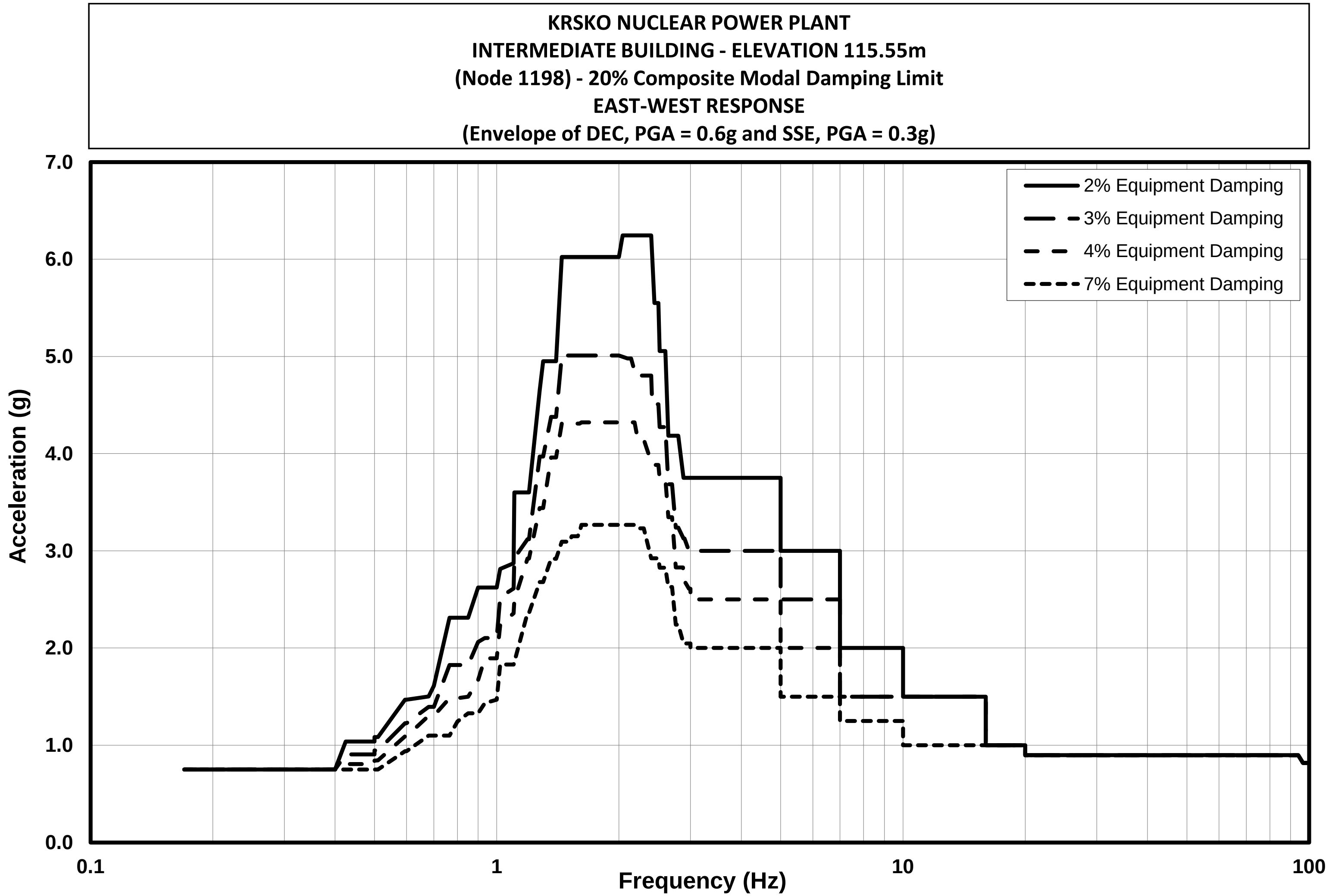

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 115.55m
(Node 1198) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100

Figure C47

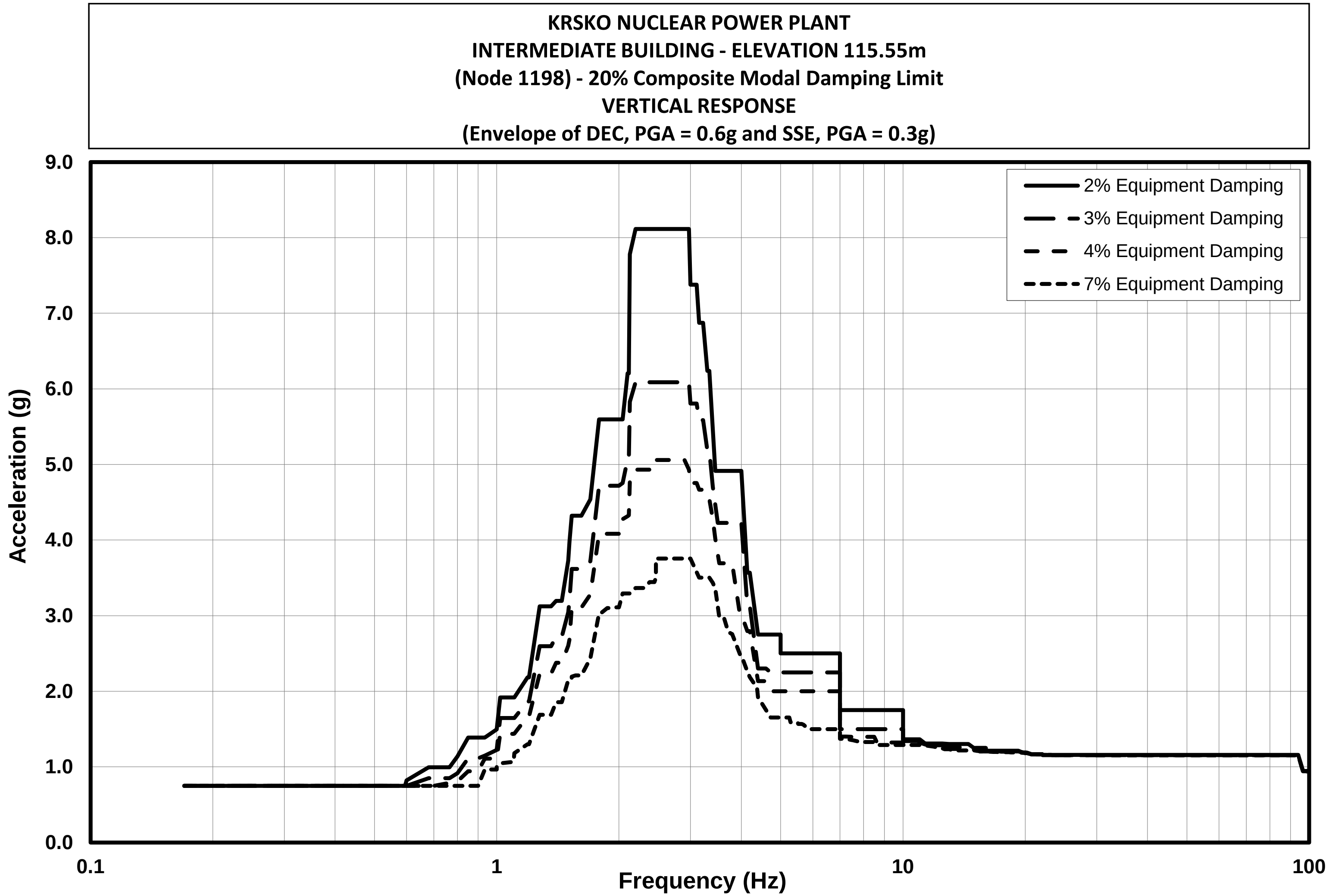
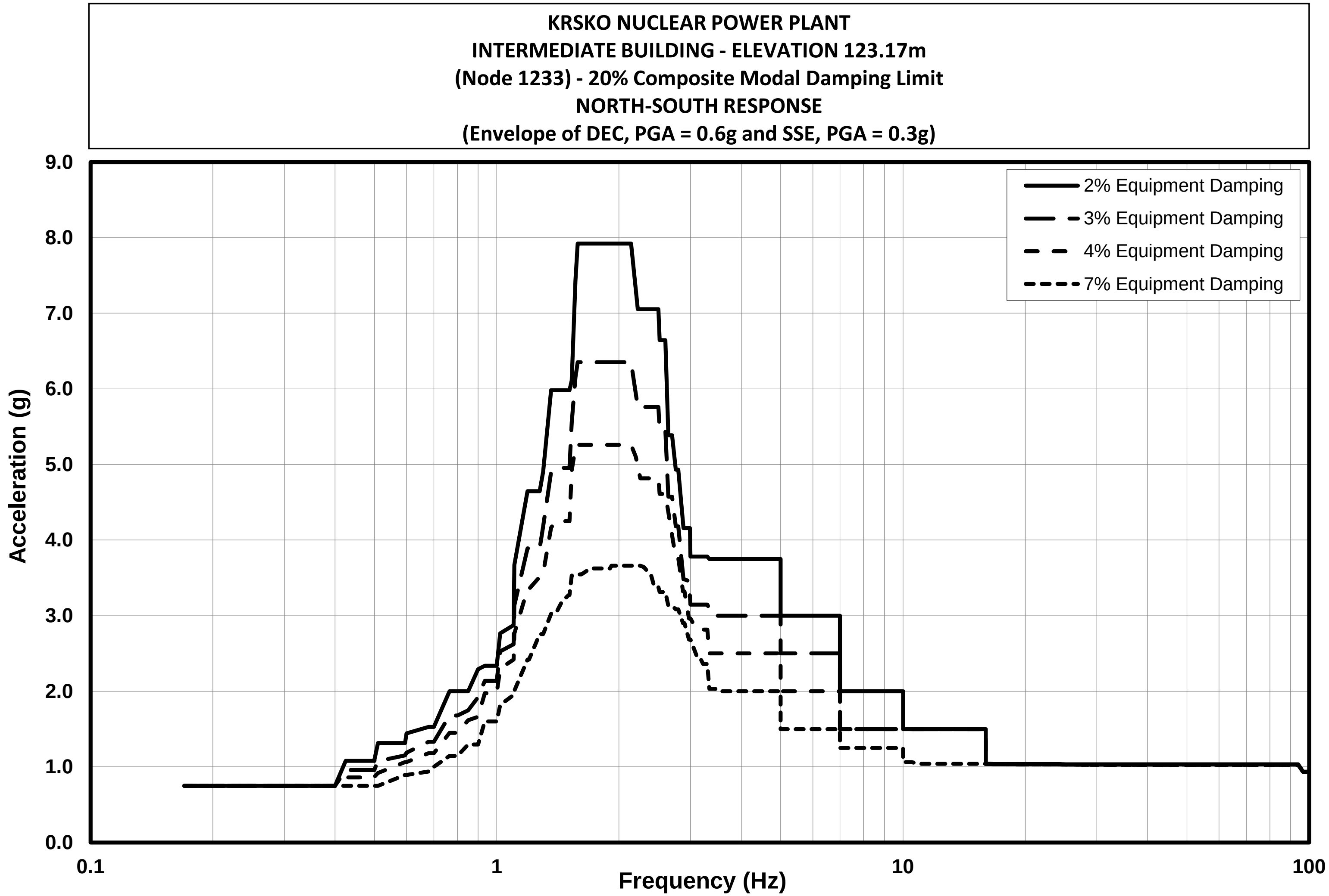

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 115.55m
(Node 1198) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.1
1
10
100

Figure C48


KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 123.17m
(Node 1233) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

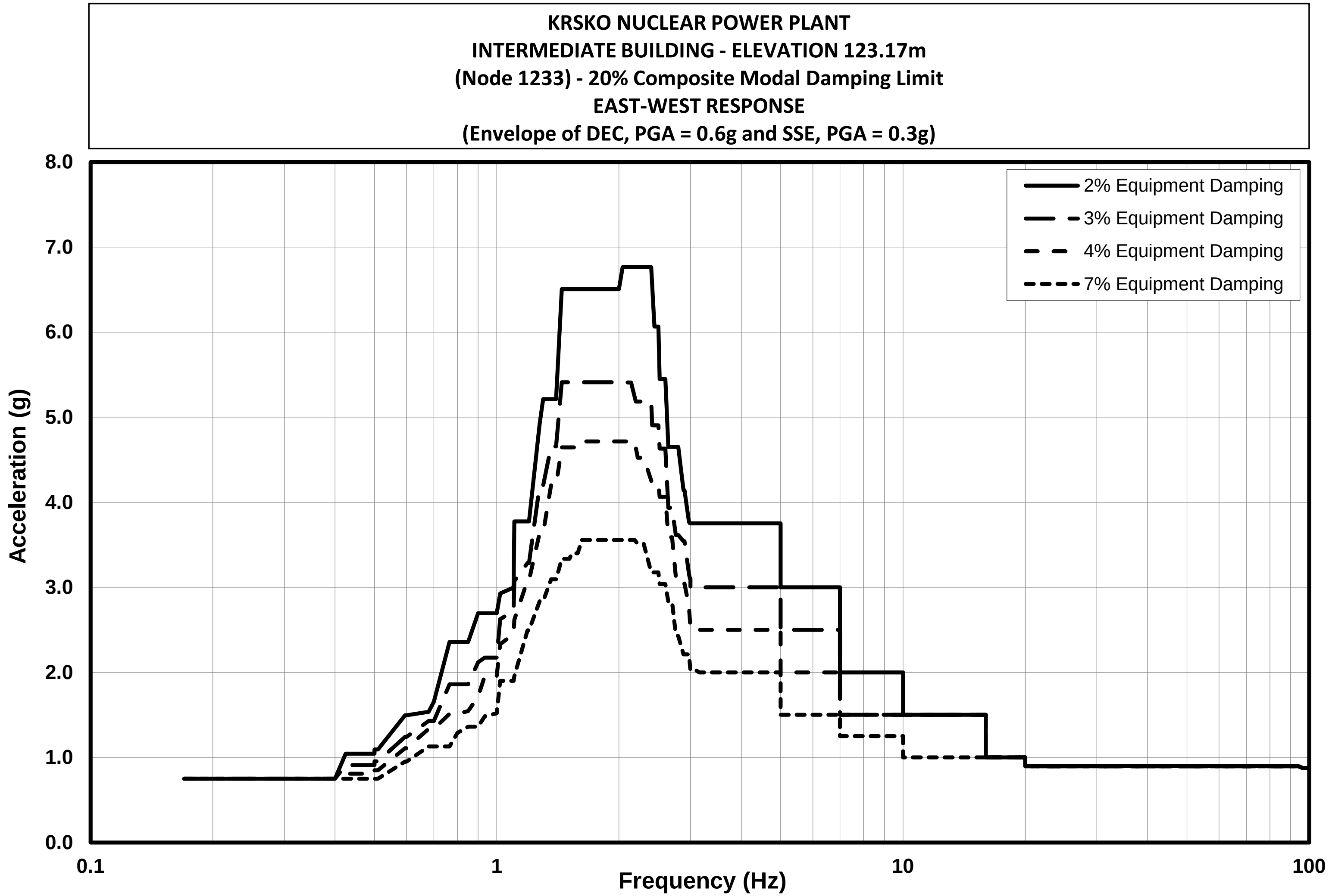
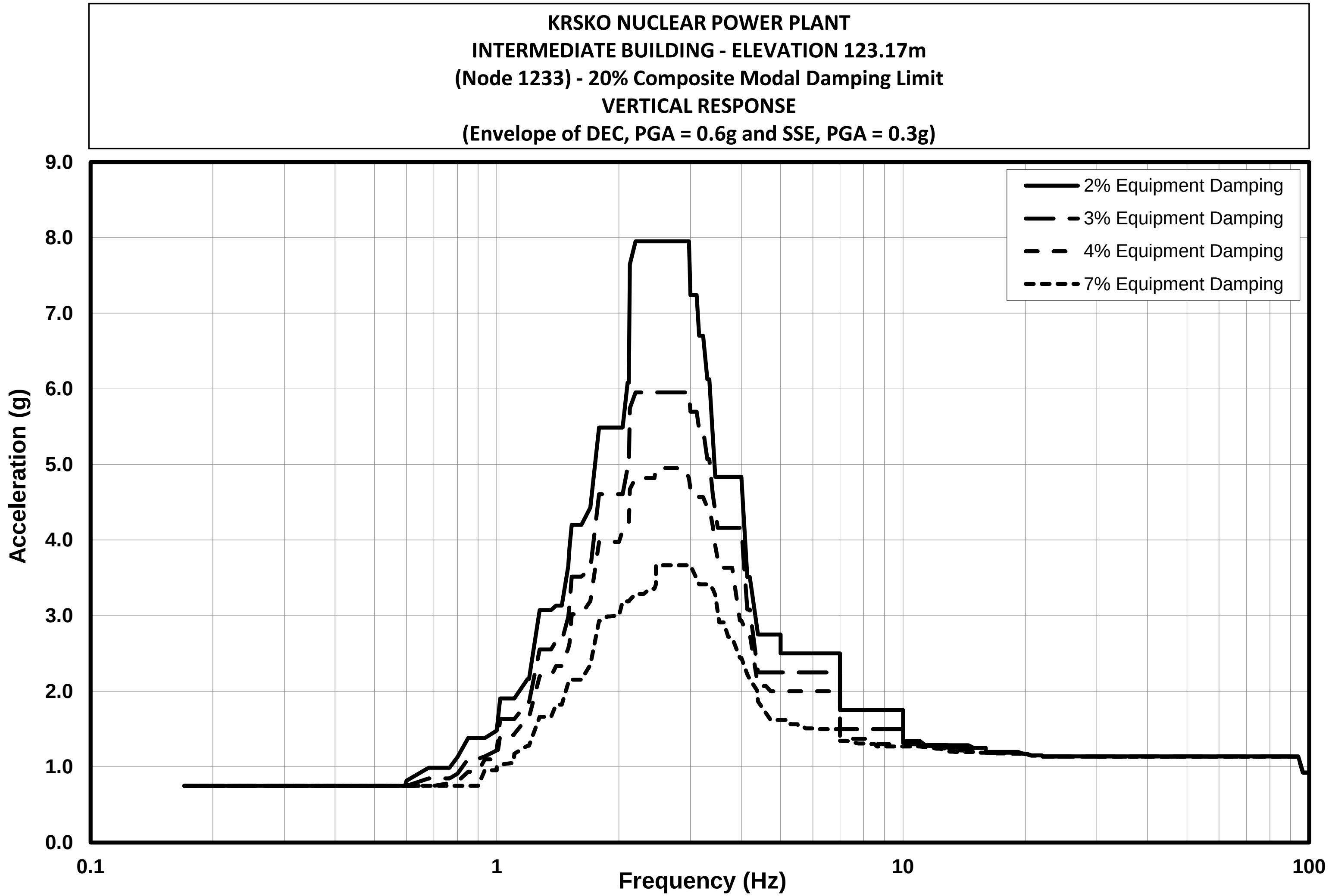

KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 123.17m
(Node 1233) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100

Figure C50


KRSKO NUCLEAR POWER PLANT
INTERMEDIATE BUILDING - ELEVATION 123.17m
(Node 1233) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

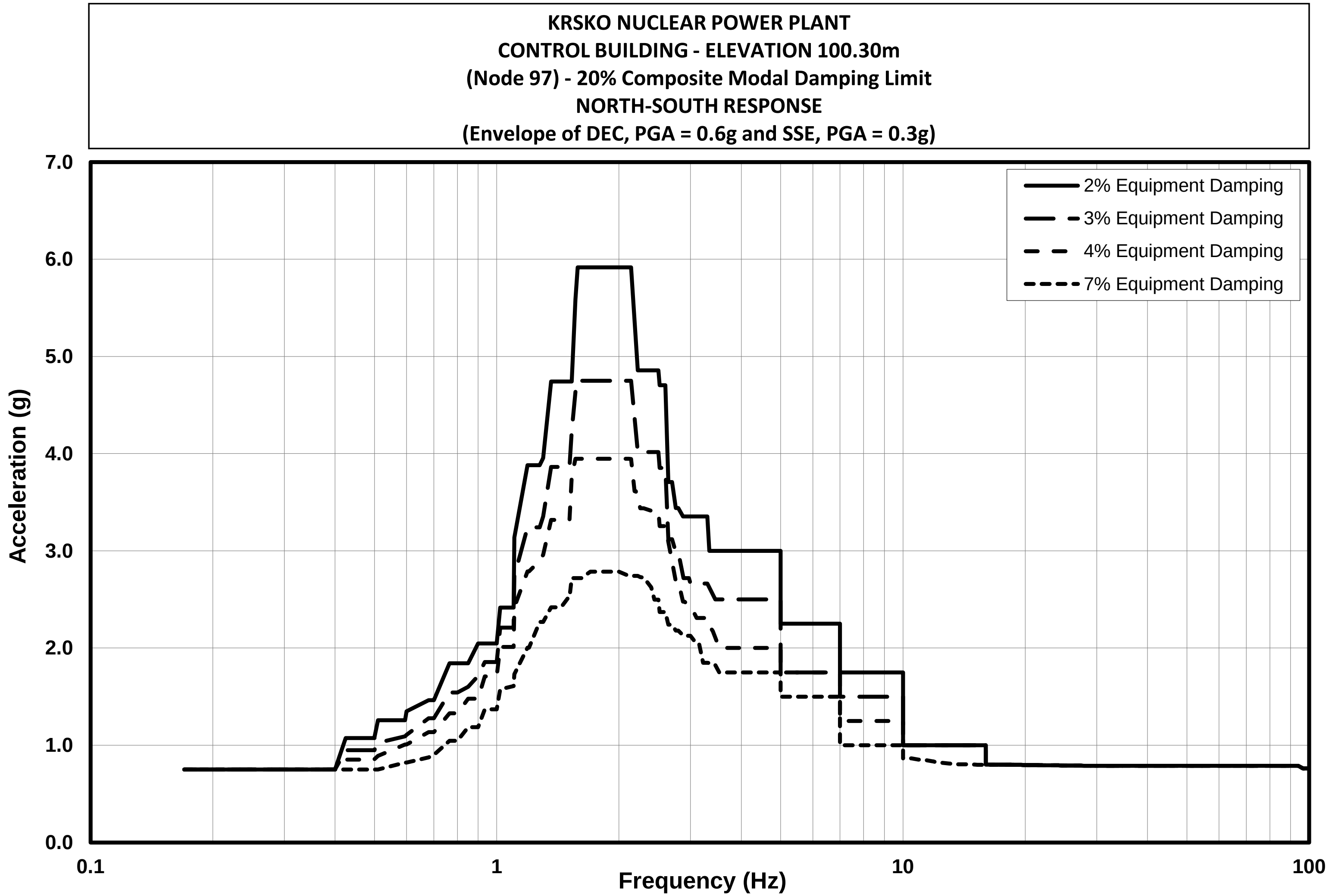

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 100.30m
(Node 97) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C52

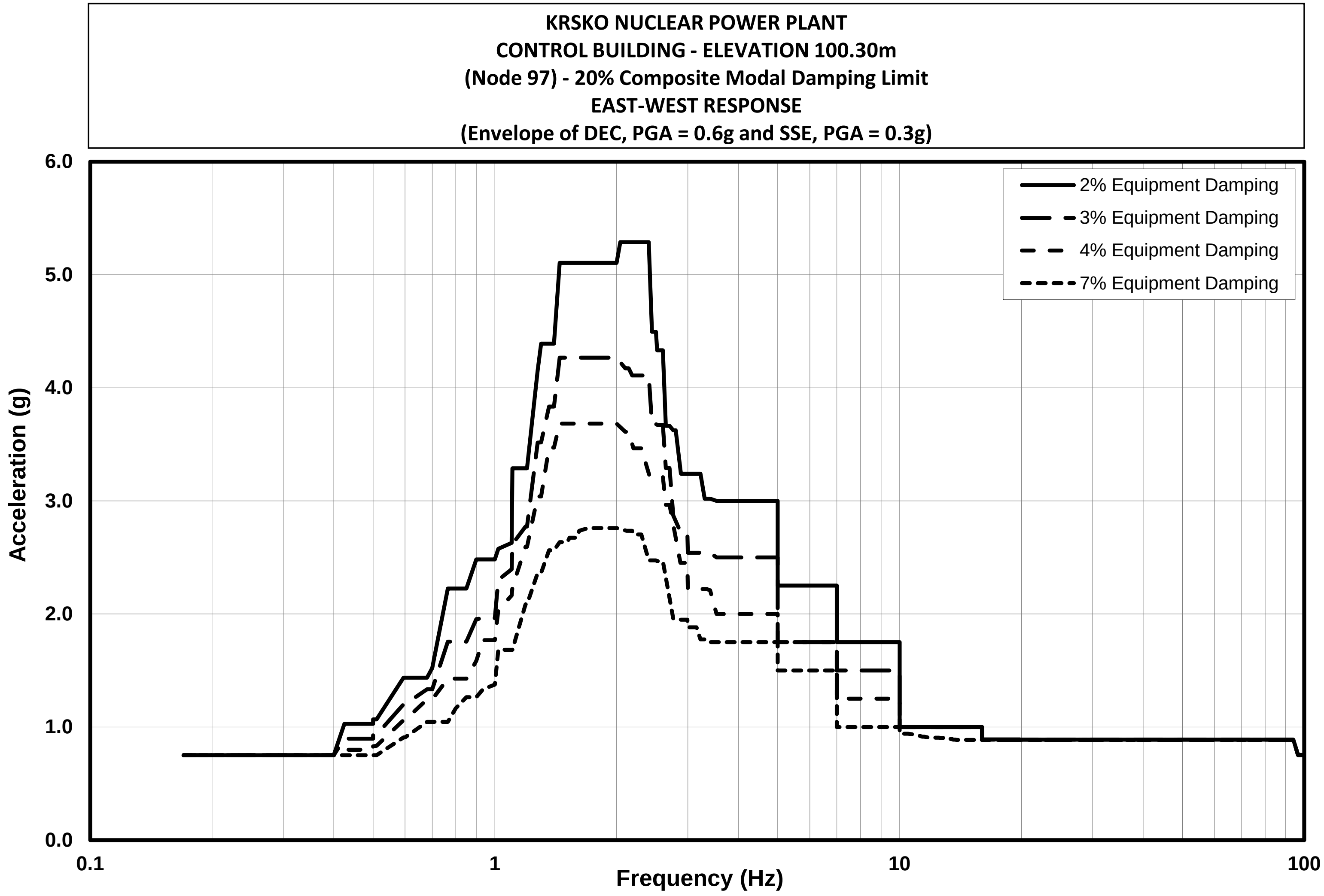
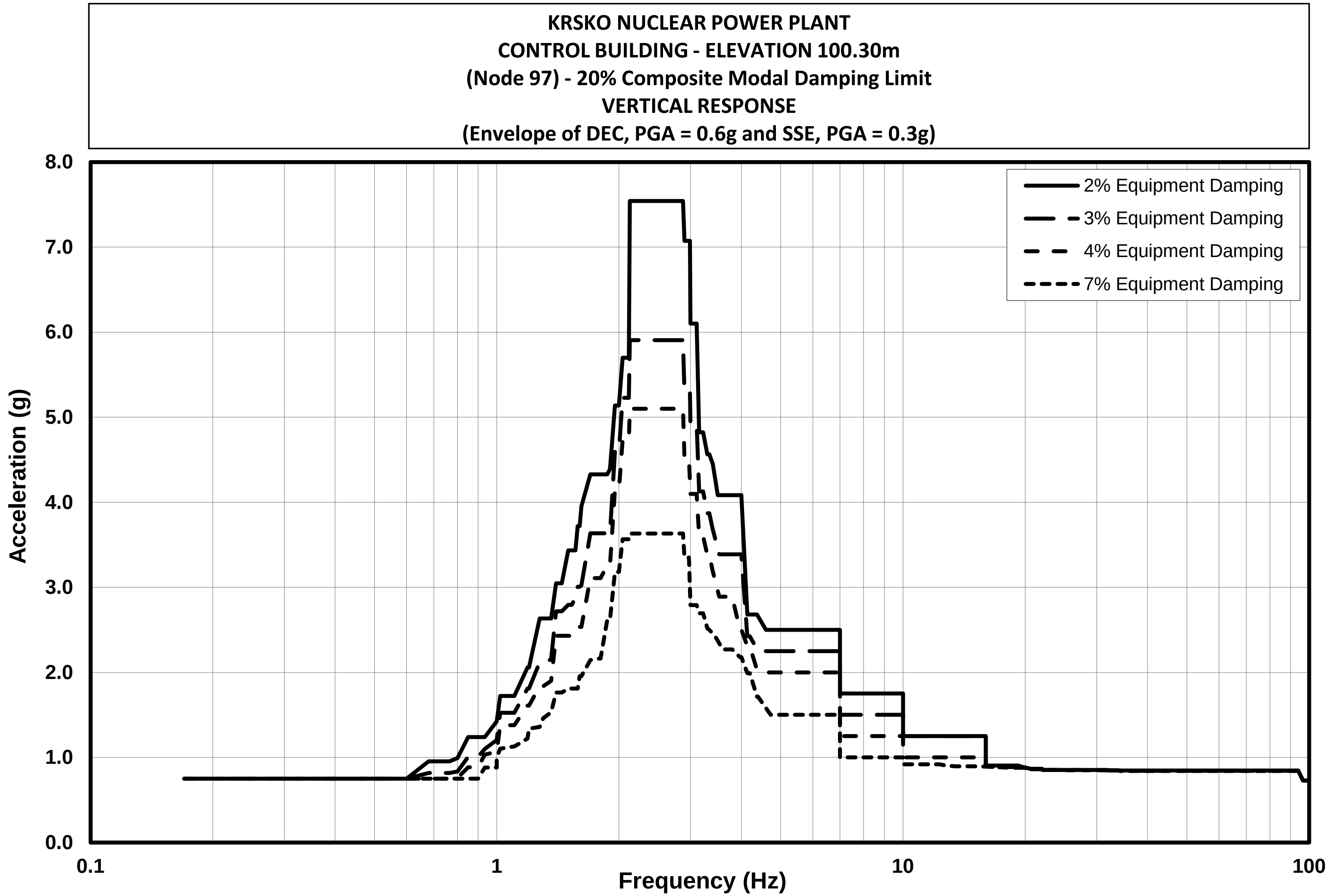
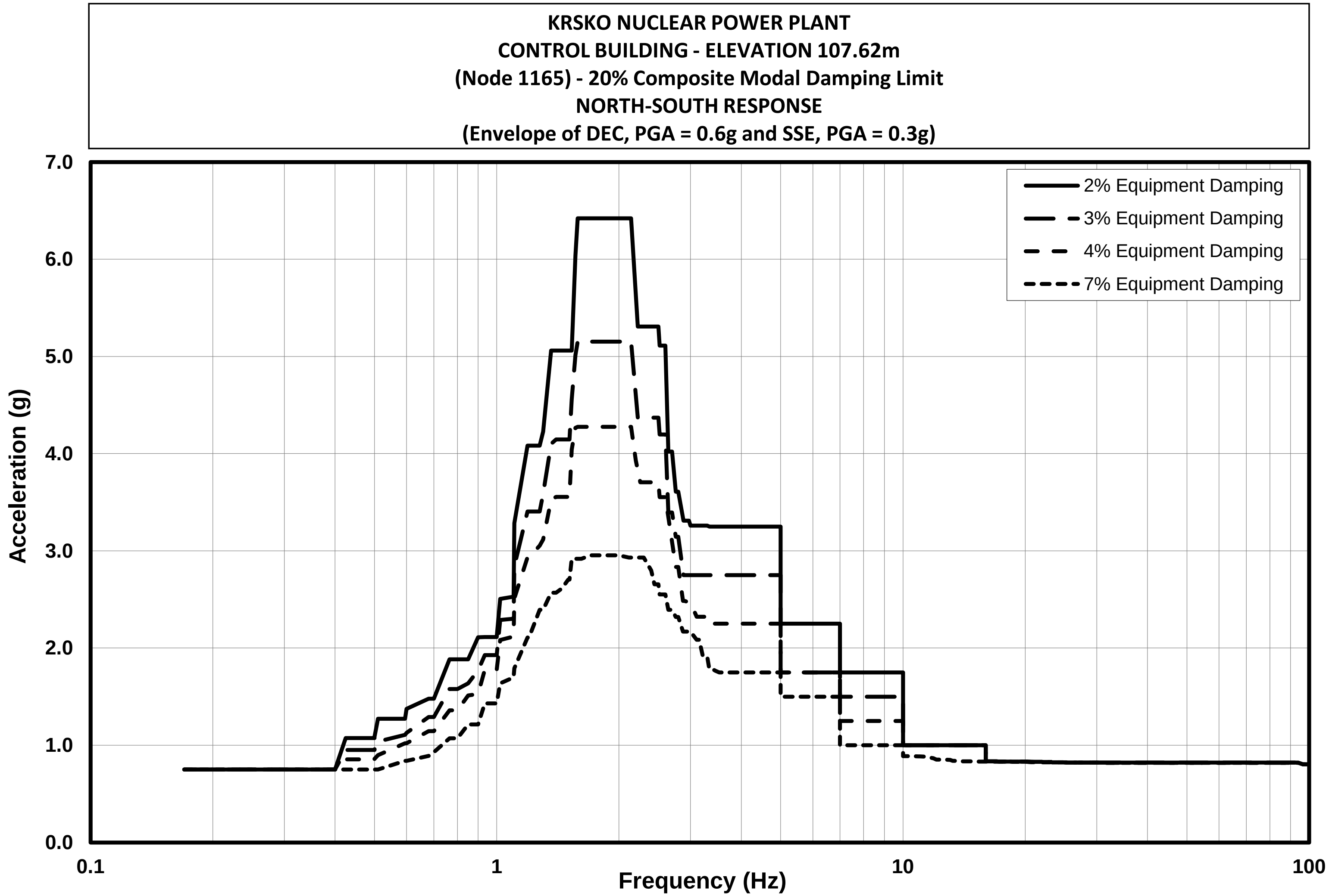
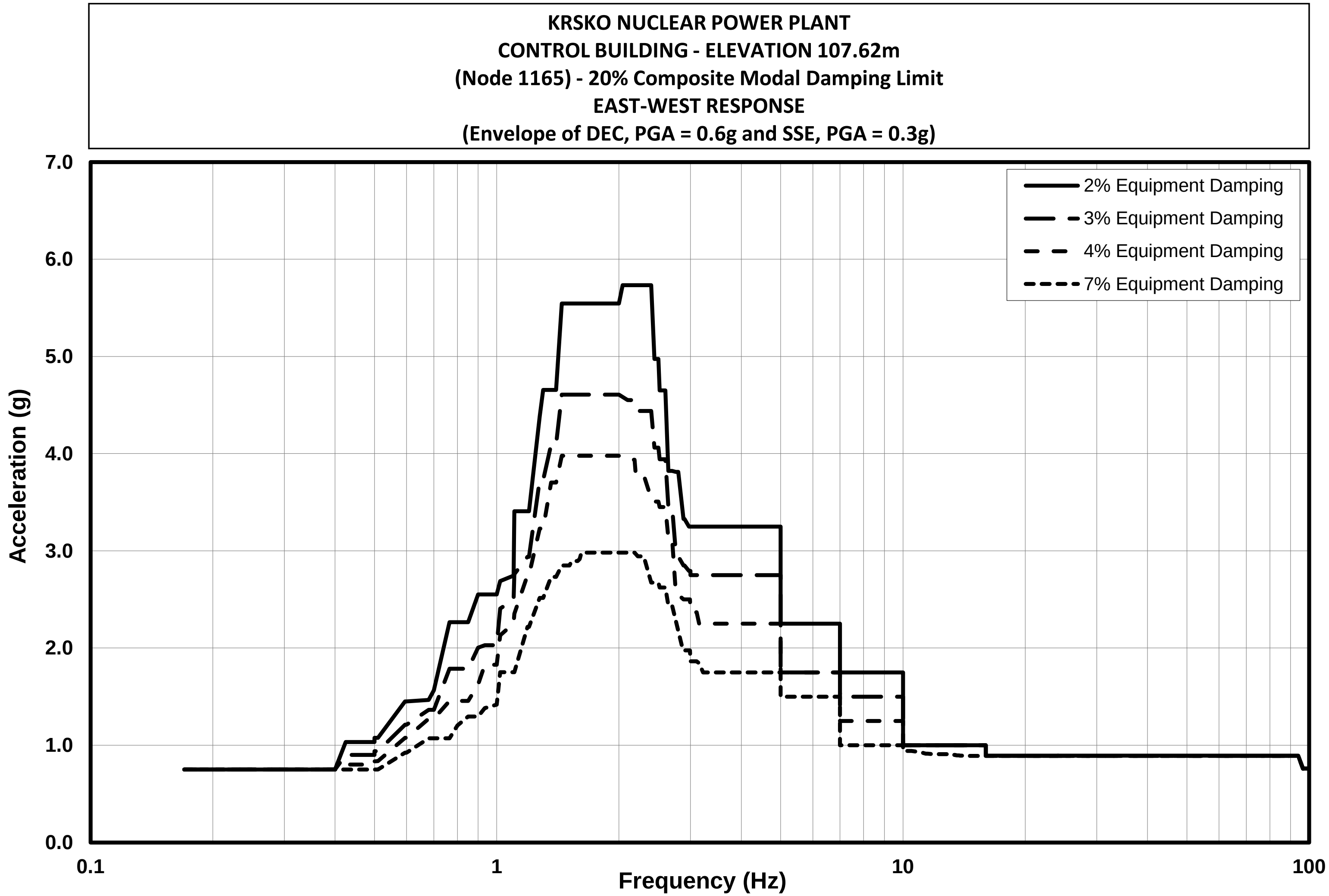
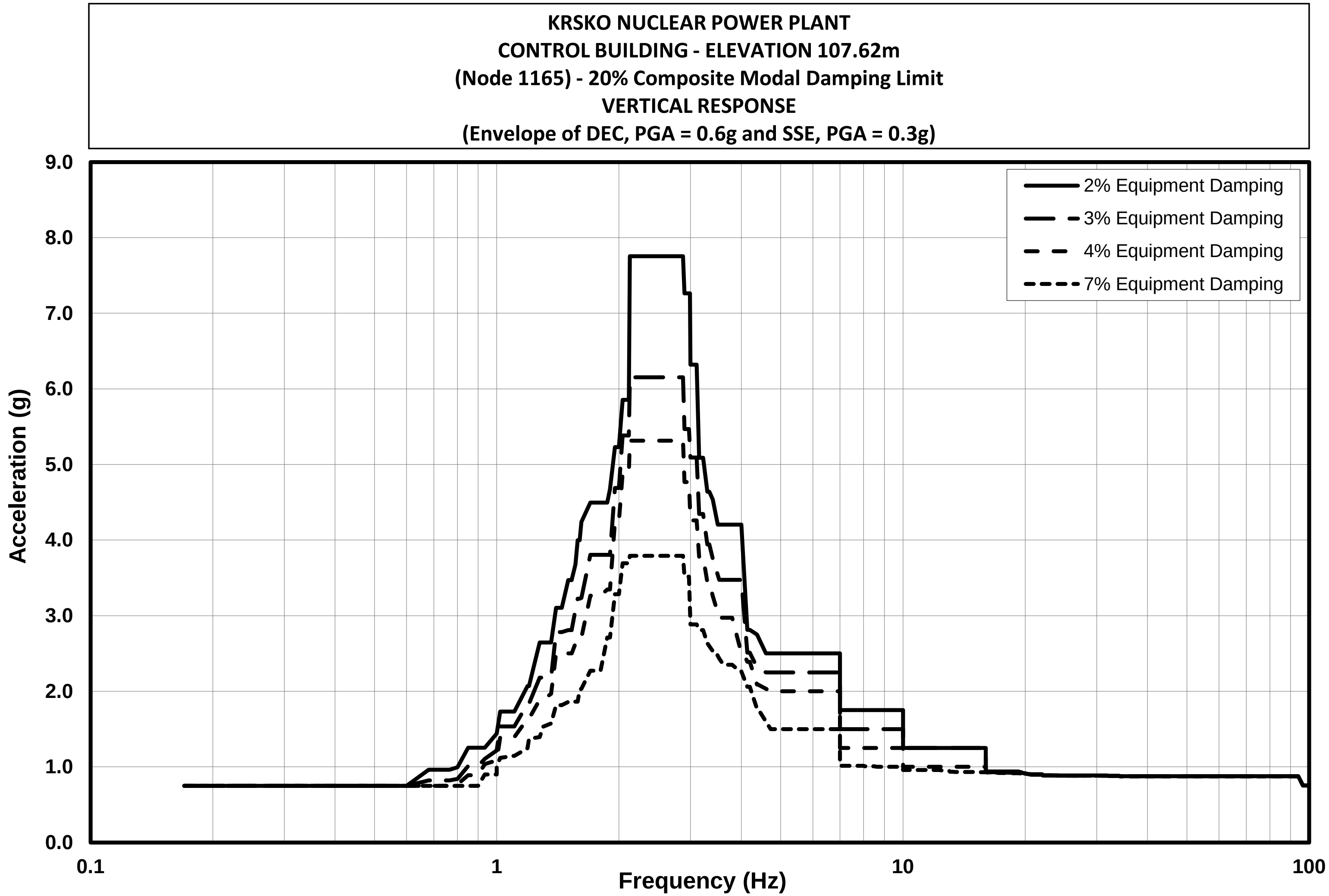

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 100.30m
(Node 97) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C53


KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 100.30m
(Node 97) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Frequency (Hz)
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 107.62m
(Node 1165) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 107.62m
(Node 1165) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)



KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 107.62m
(Node 1165) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C57

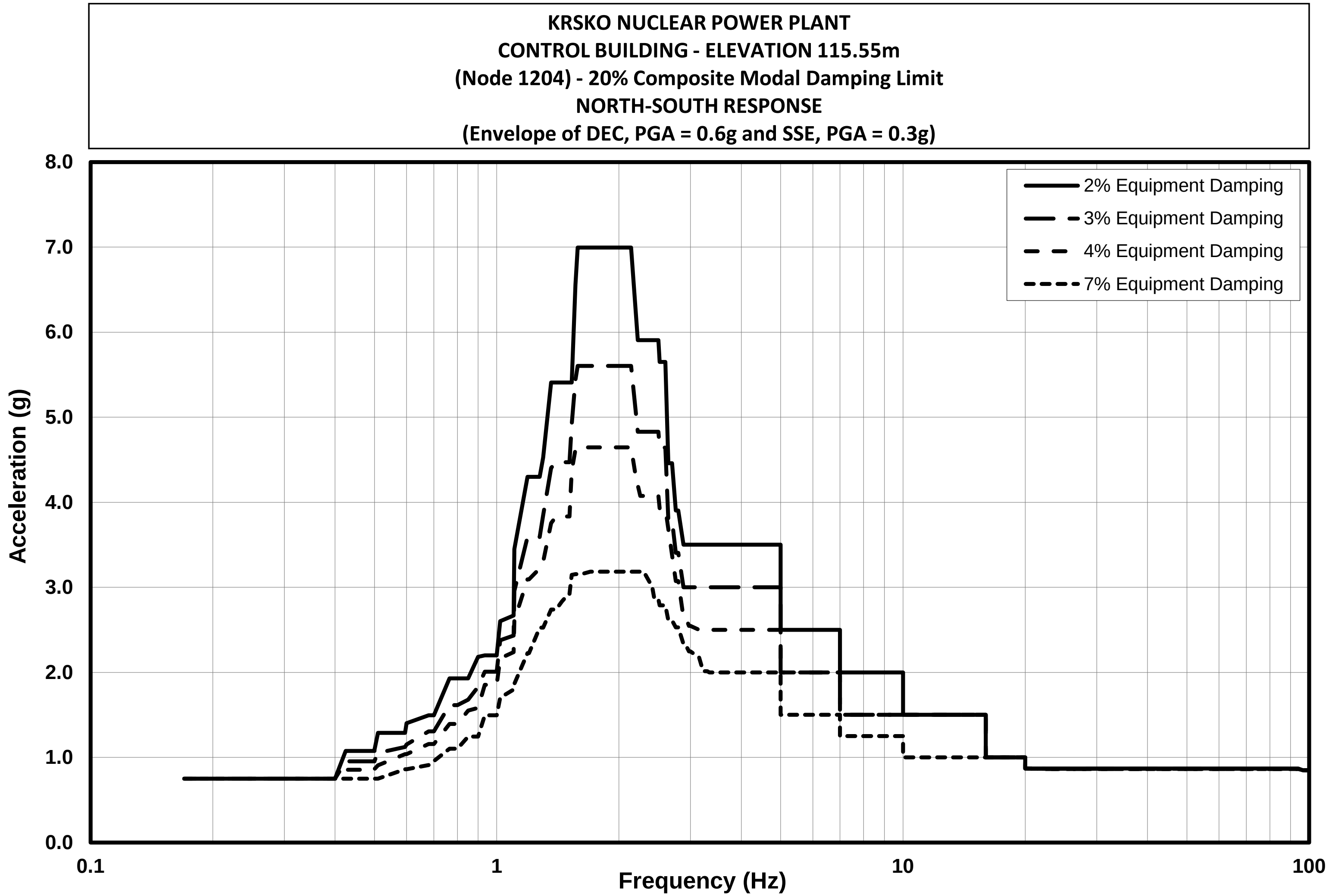

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 115.55m
(Node 1204) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C58

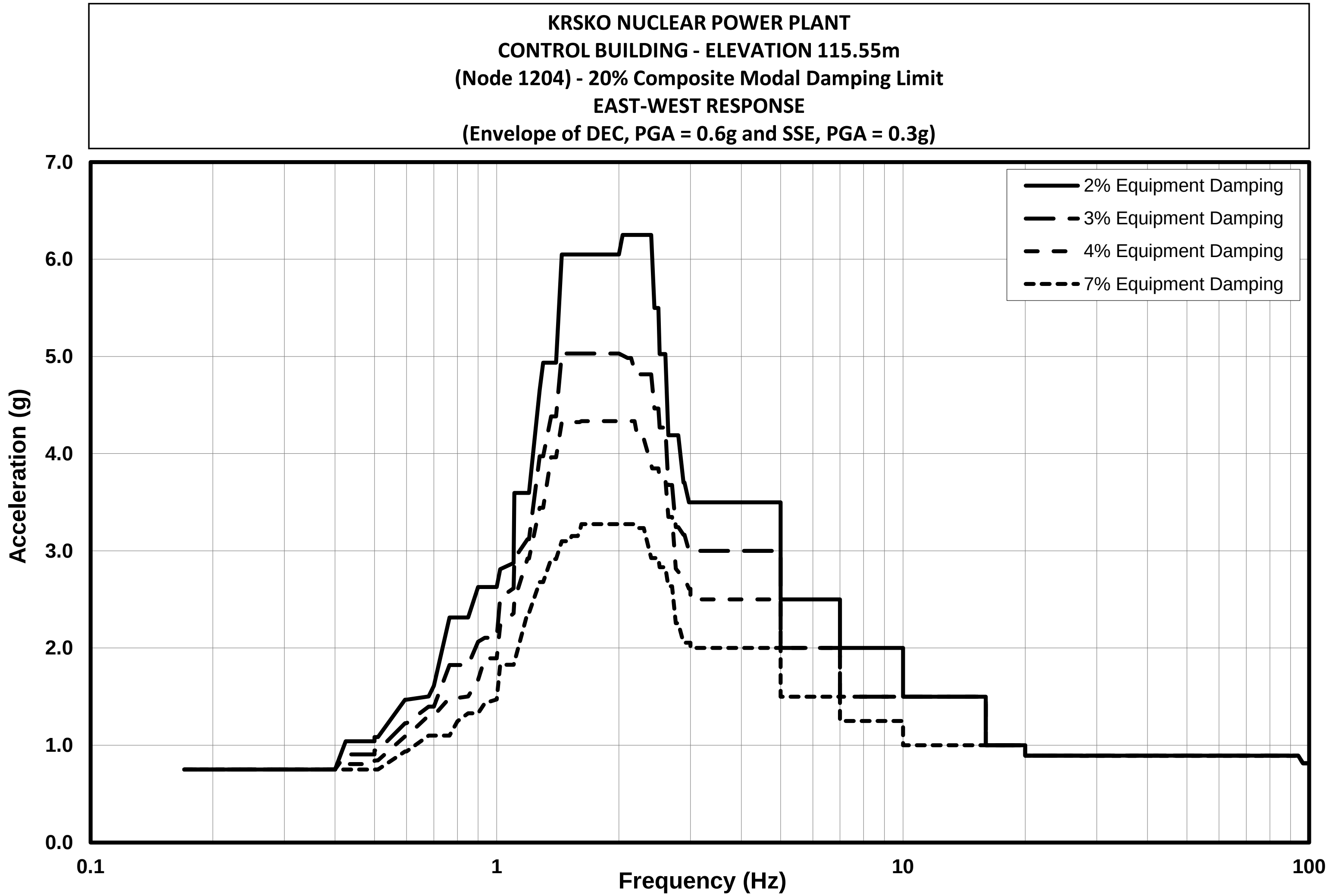
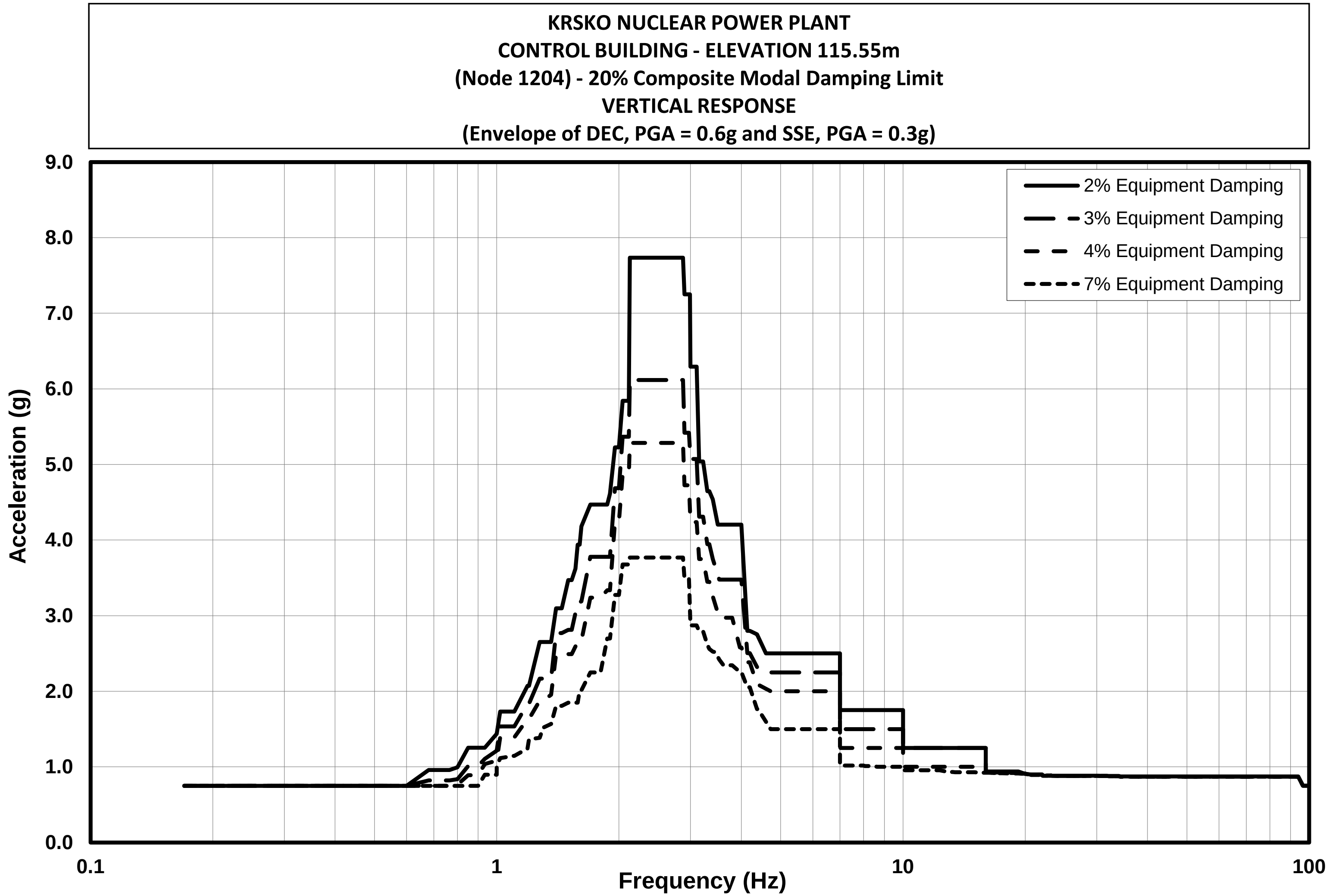
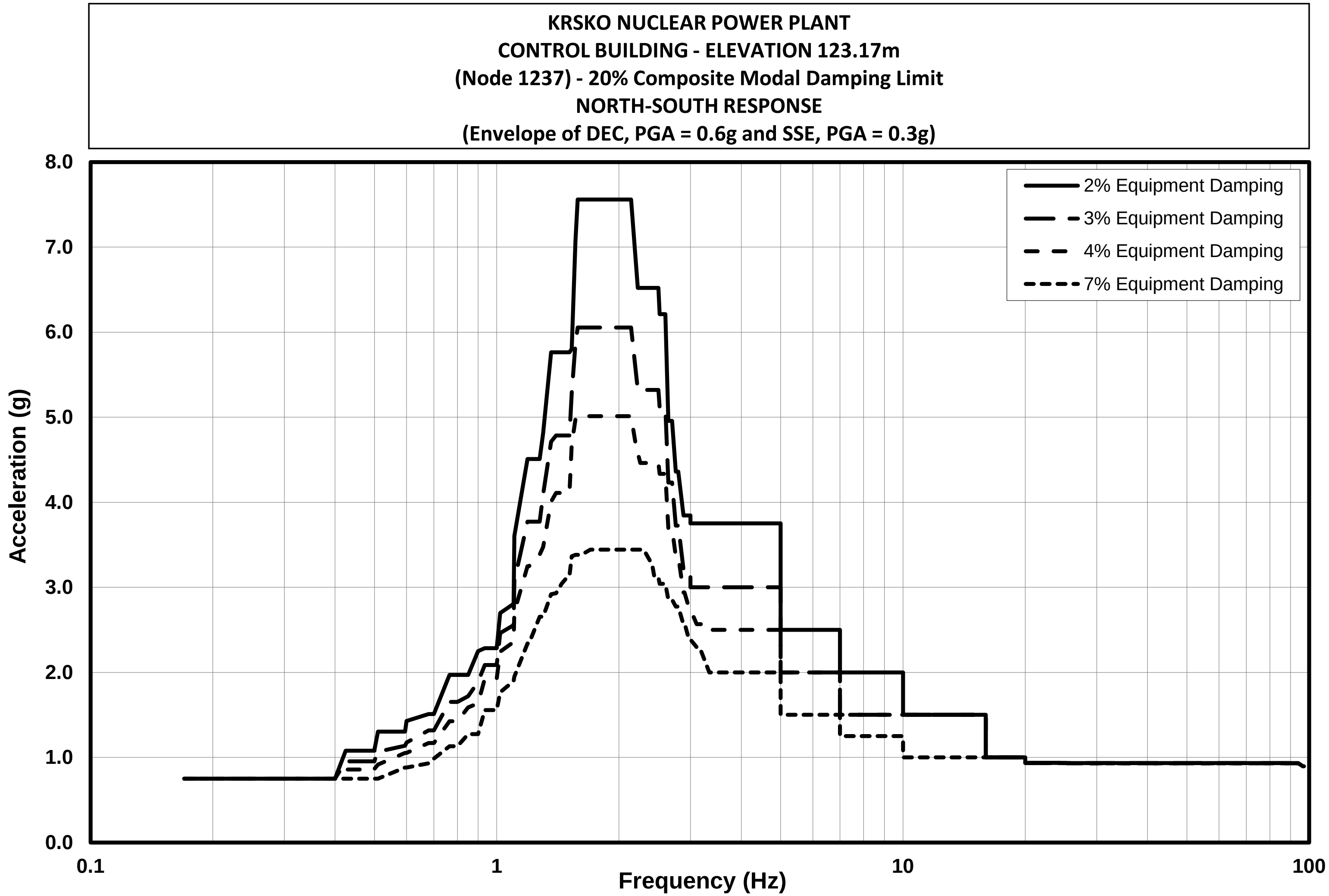

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 115.55m
(Node 1204) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C59


KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 115.55m
(Node 1204) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 123.17m
(Node 1237) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

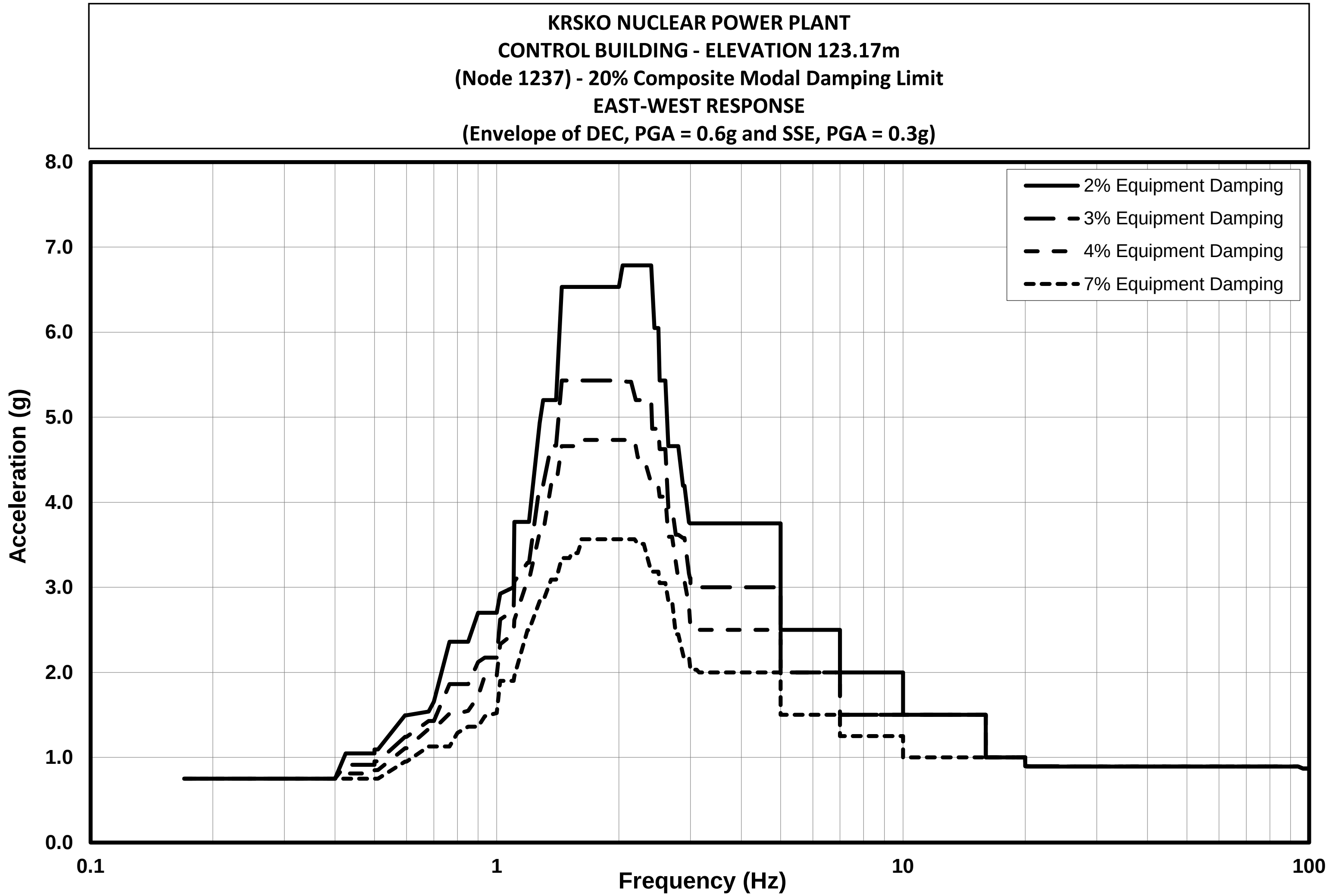

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 123.17m
(Node 1237) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure C62

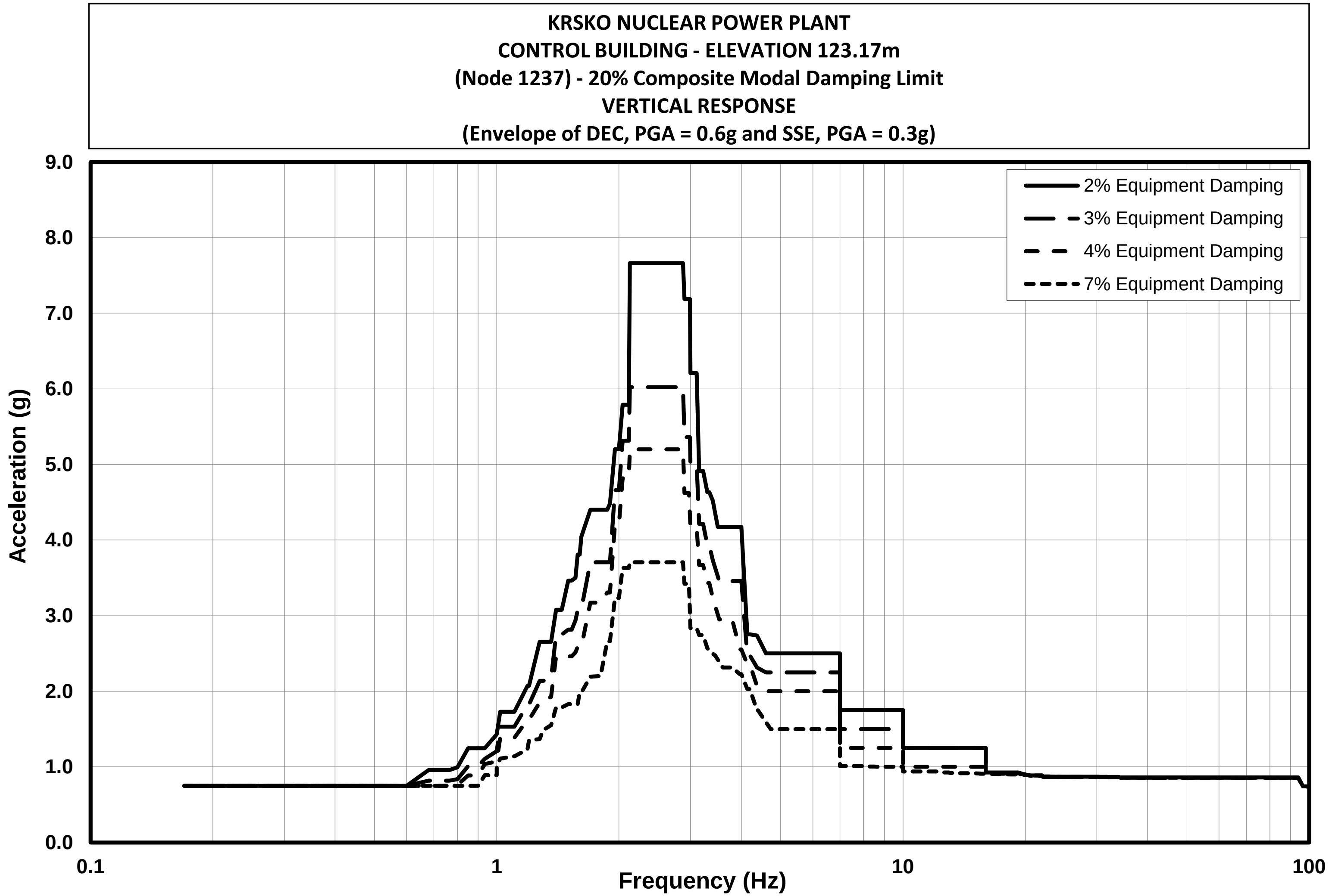
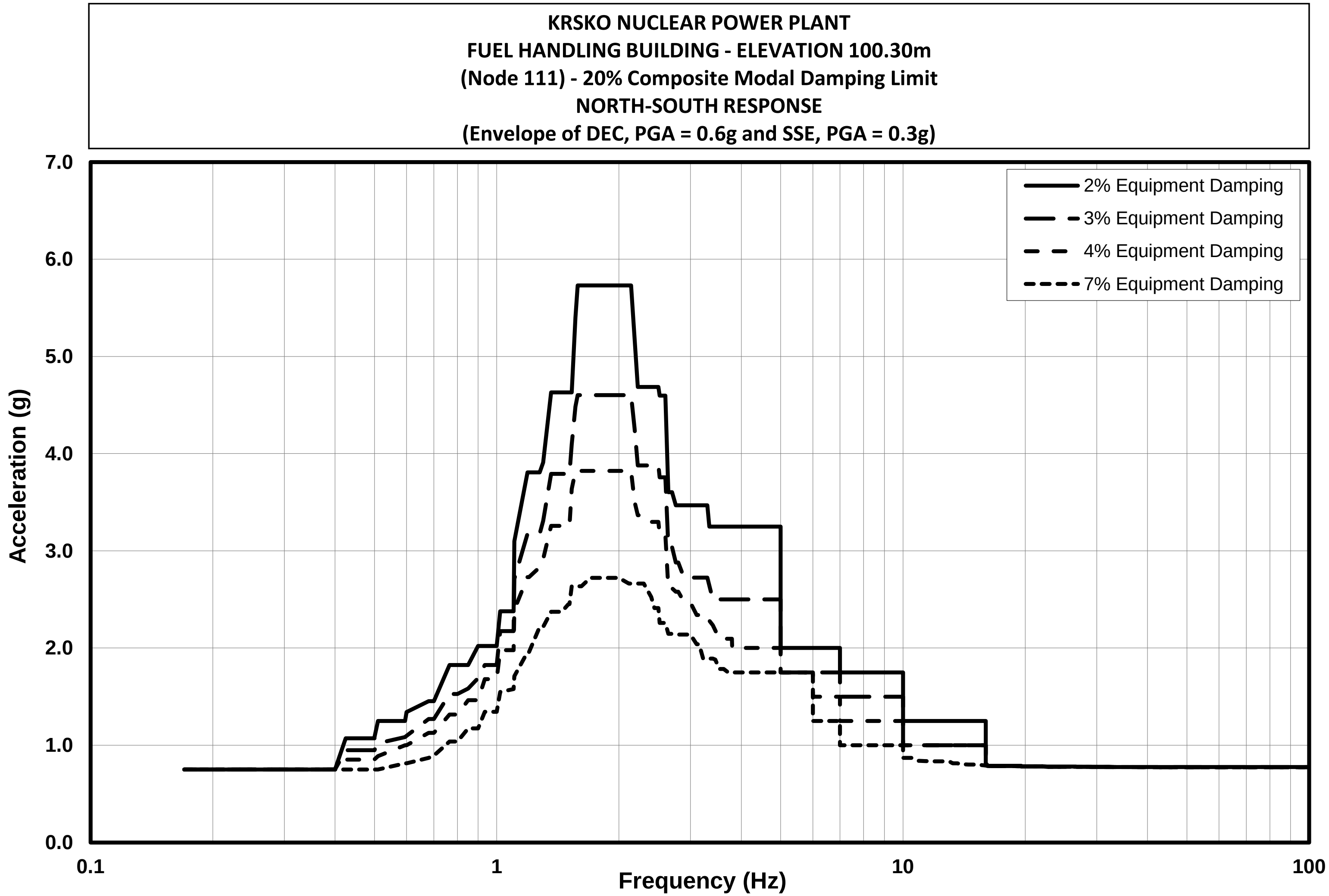
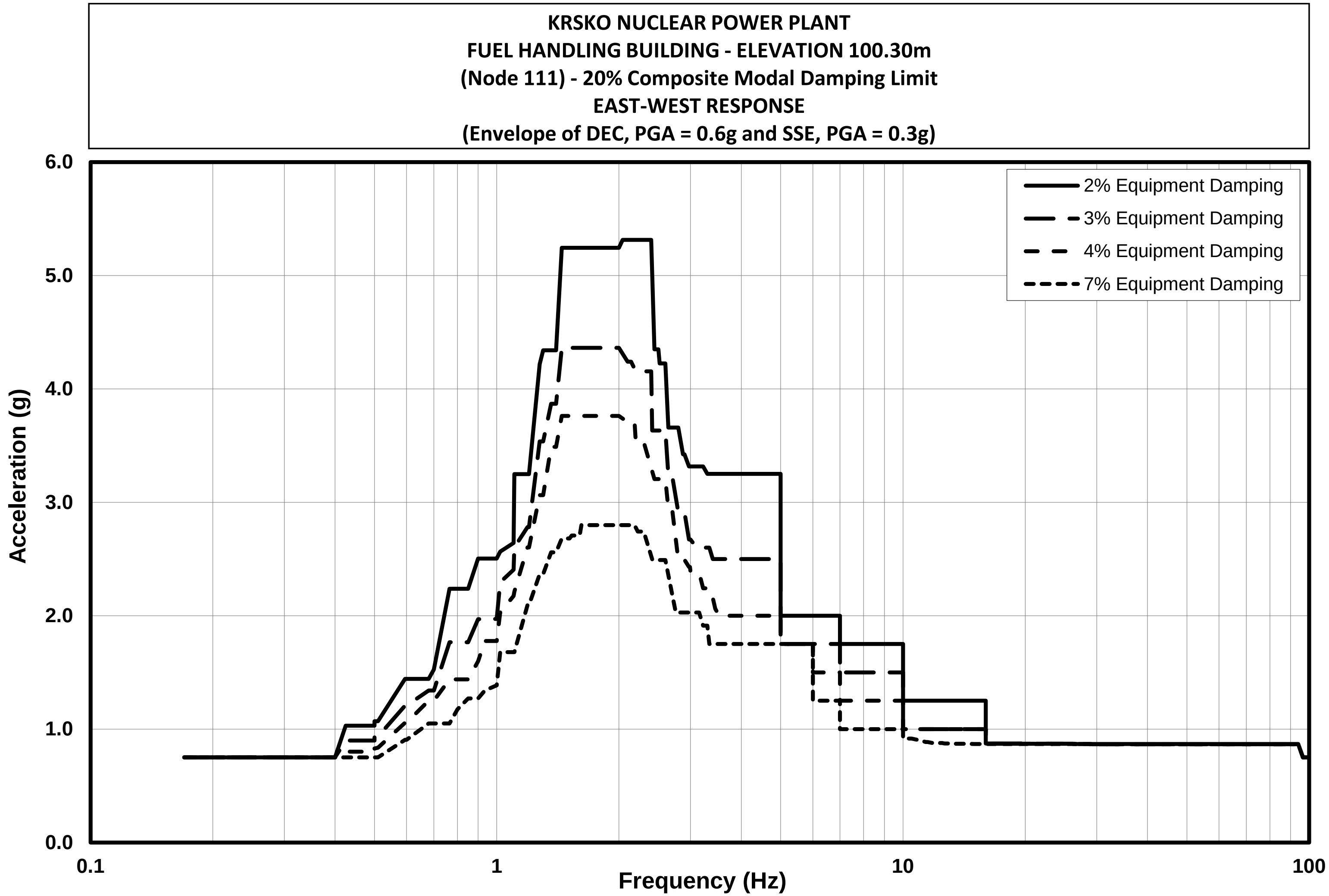
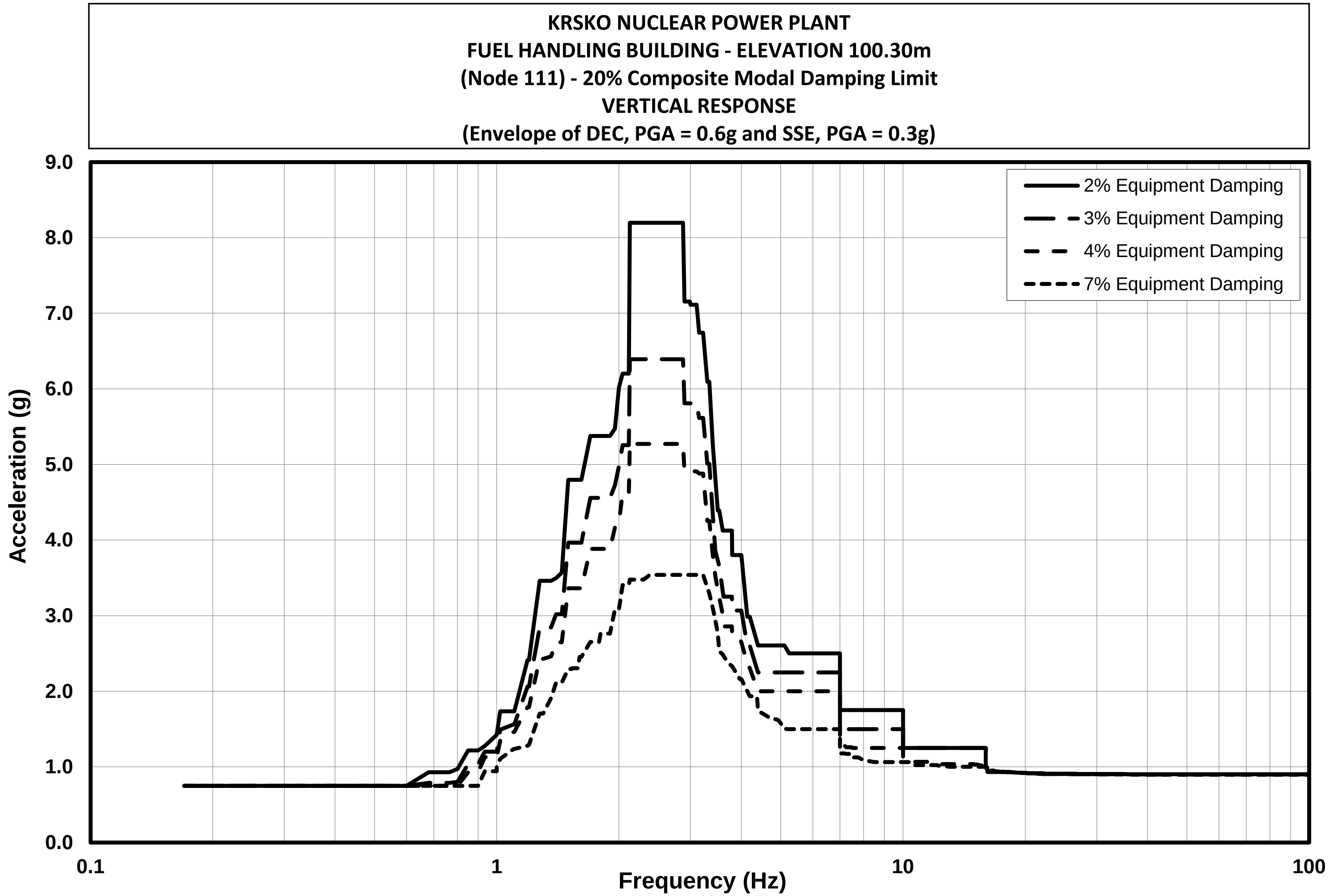
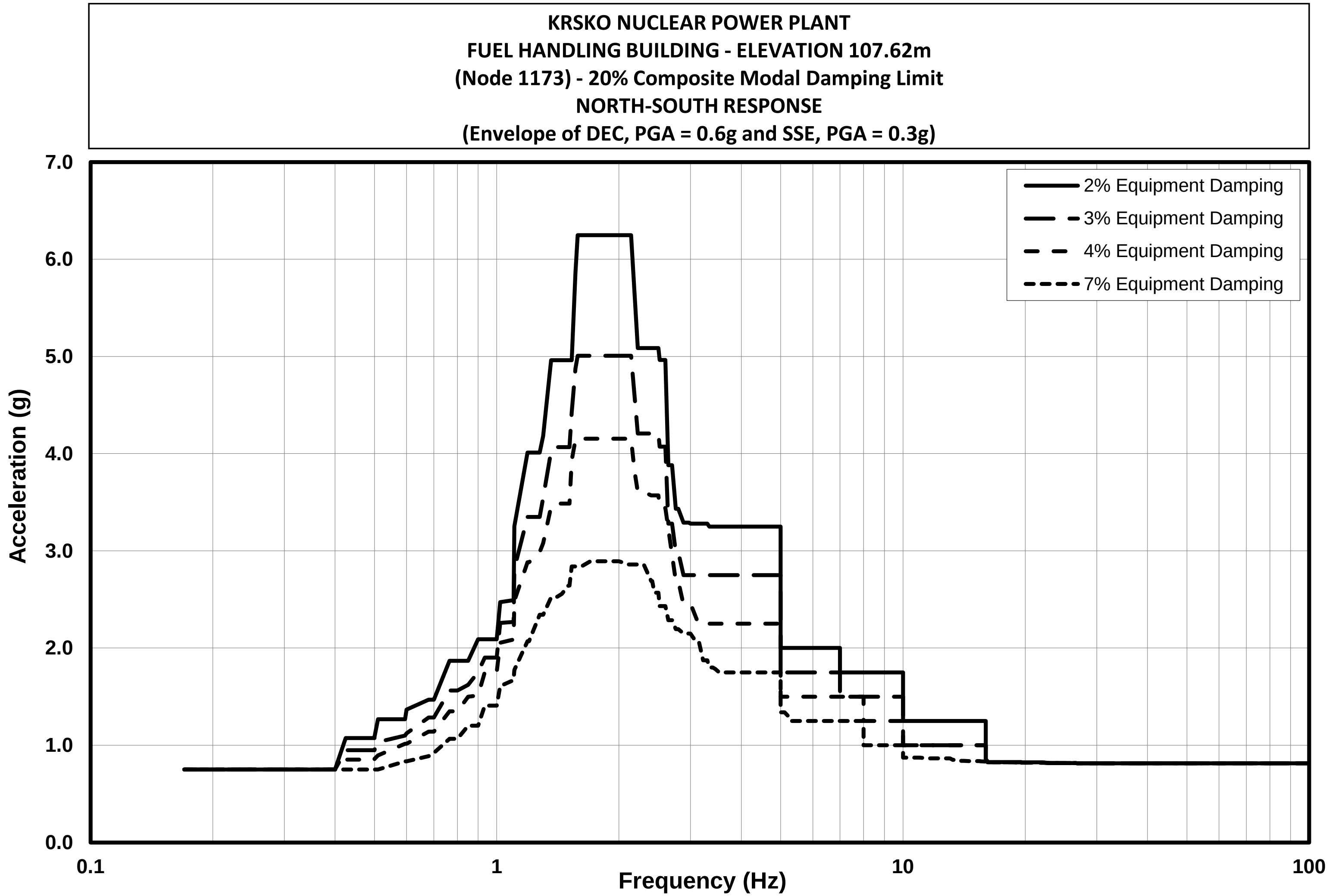

KRSKO NUCLEAR POWER PLANT
CONTROL BUILDING - ELEVATION 123.17m
(Node 1237) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C63


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 100.30m
(Node 111) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 100.30m
(Node 111) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 100.30m
(Node 111) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 107.62m
(Node 1173) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

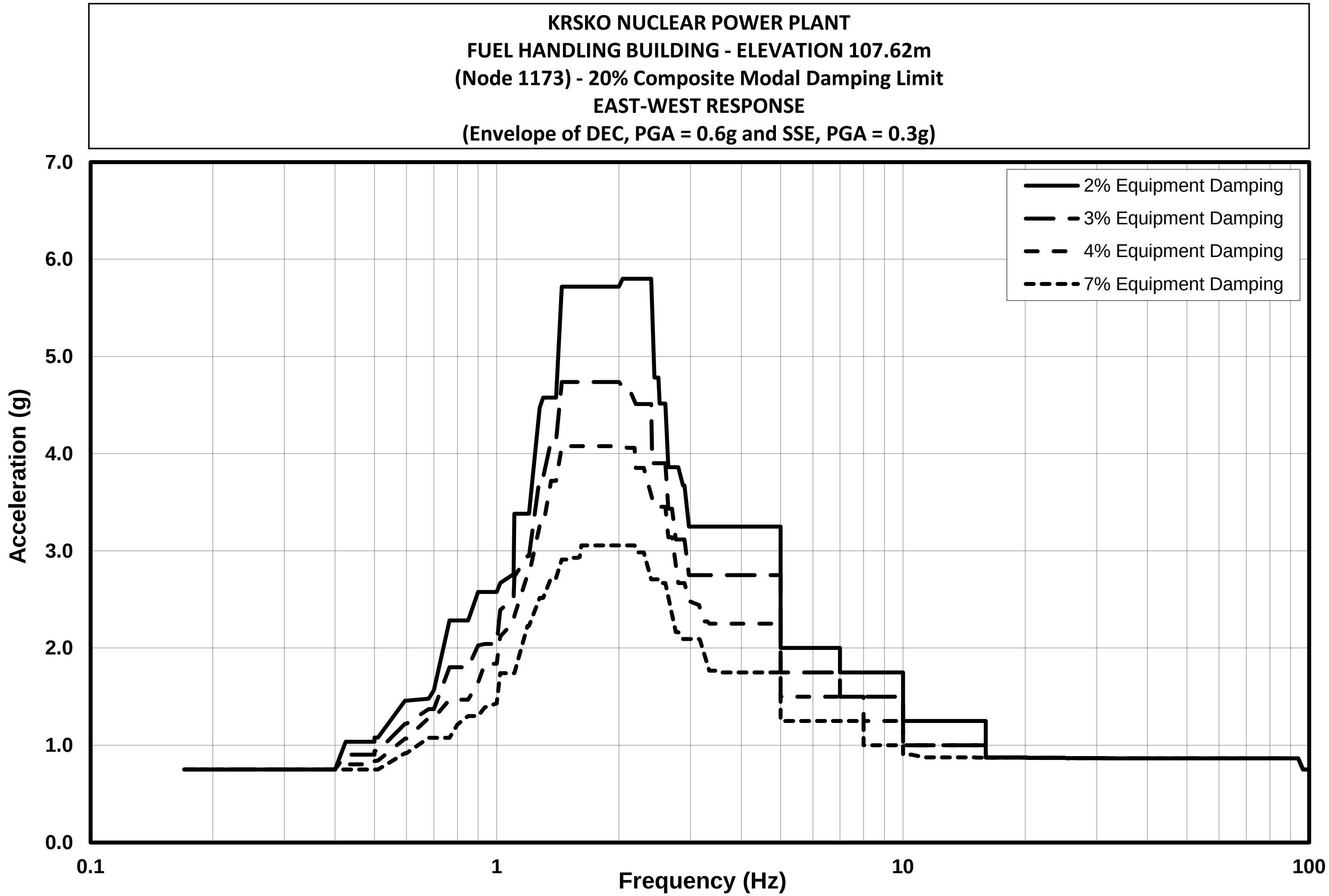
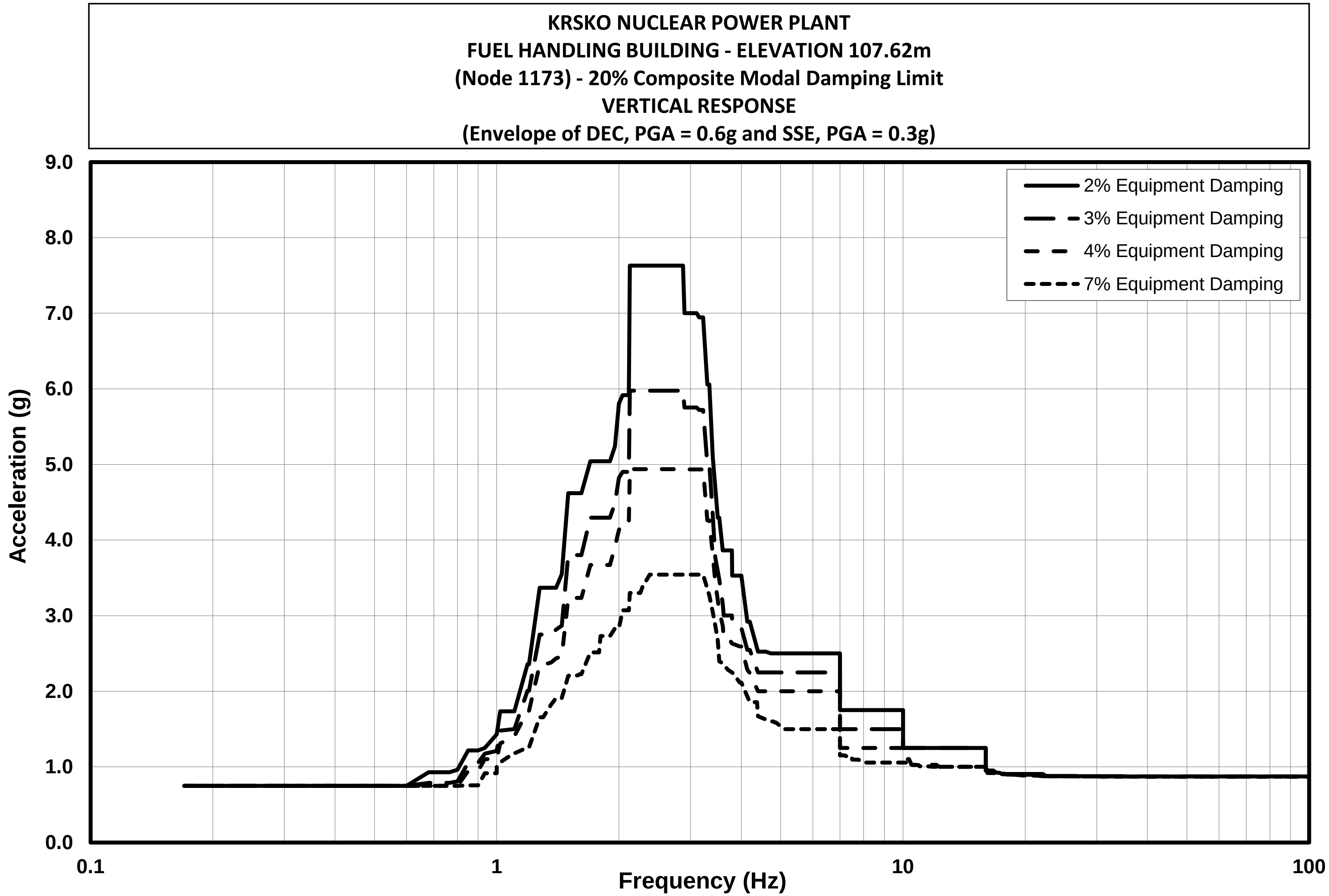
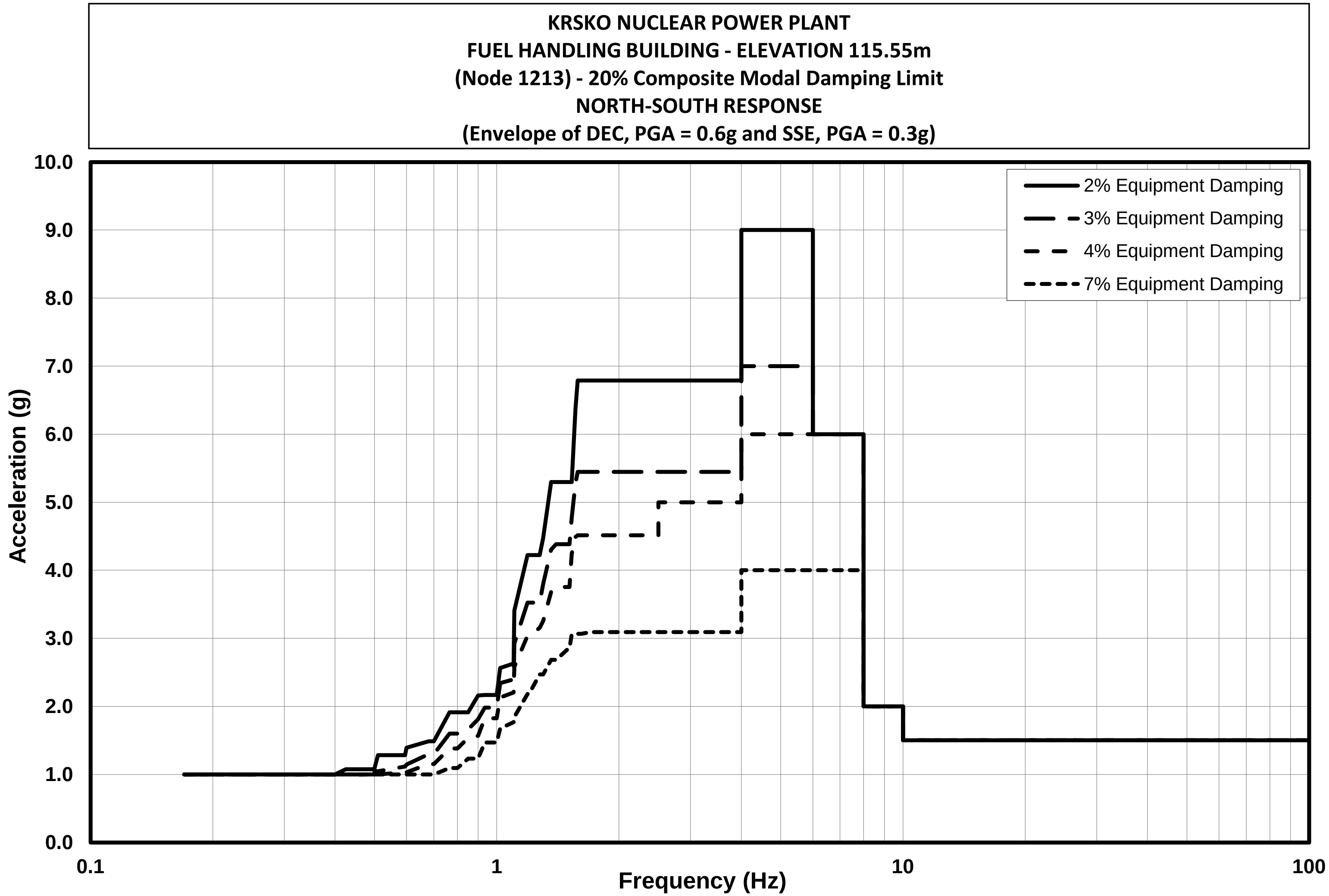
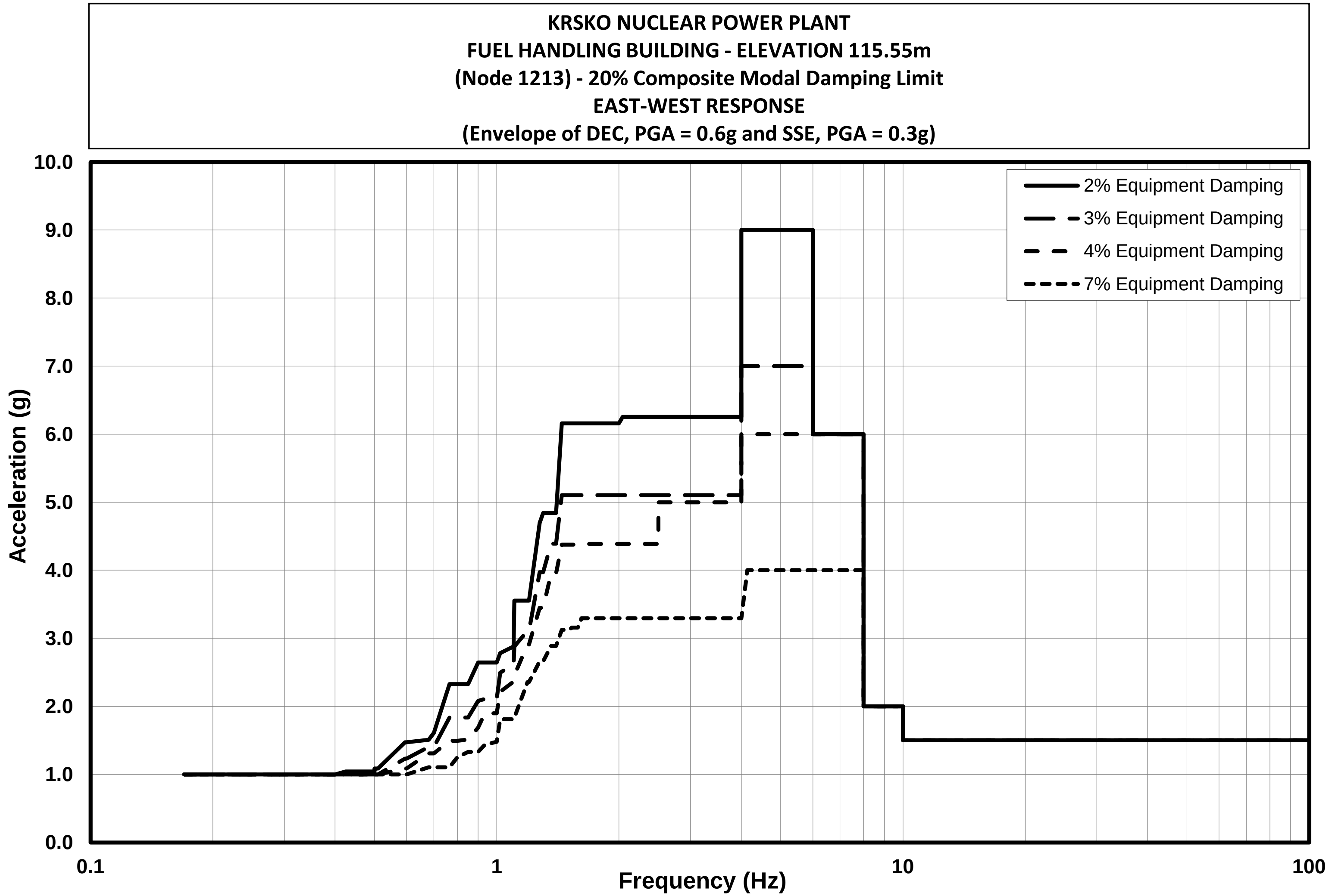
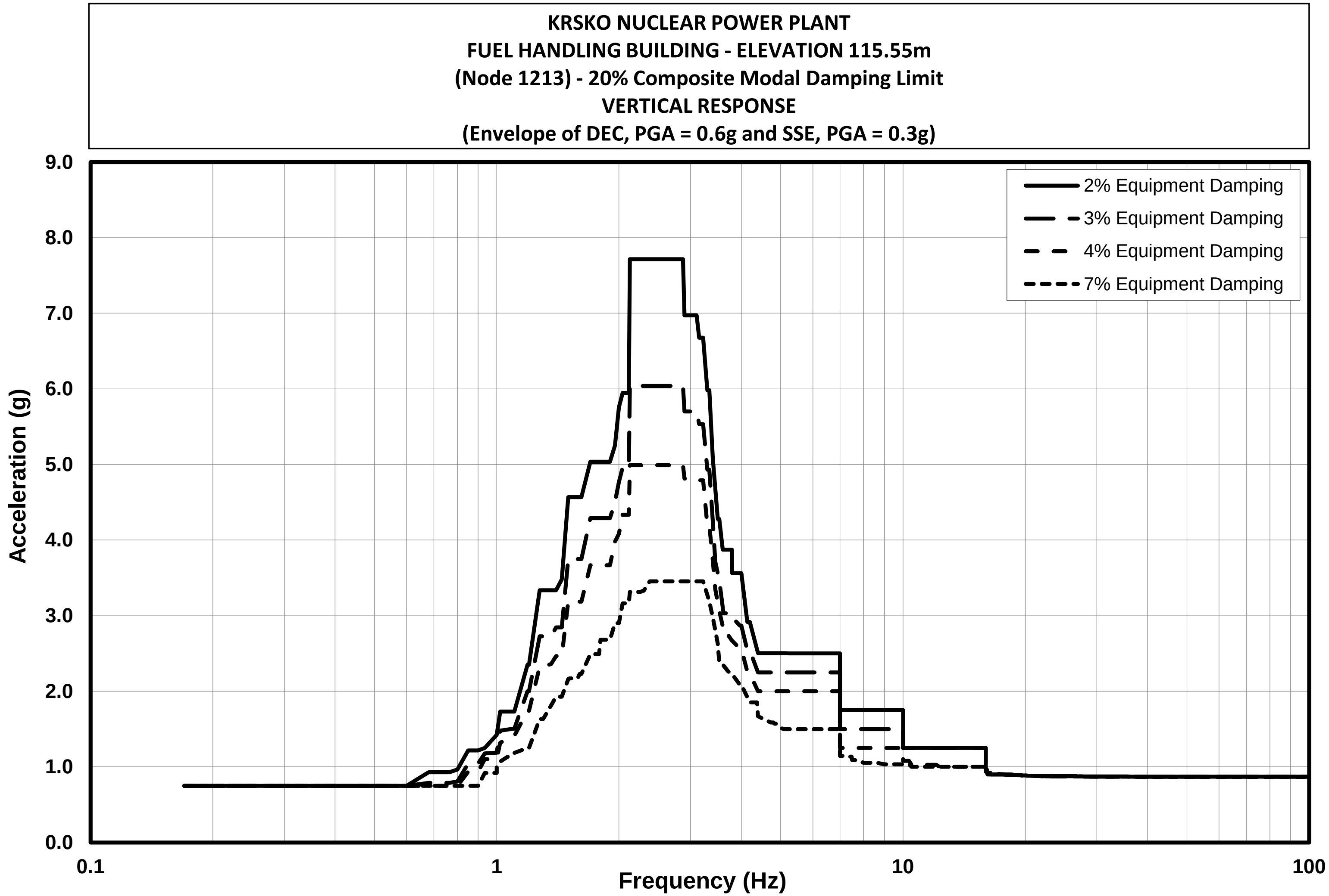

KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 107.62m
(Node 1173) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C68


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 107.62m
(Node 1173) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 115.55m
(Node 1213) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 115.55m
(Node 1213) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 115.55m
(Node 1213) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

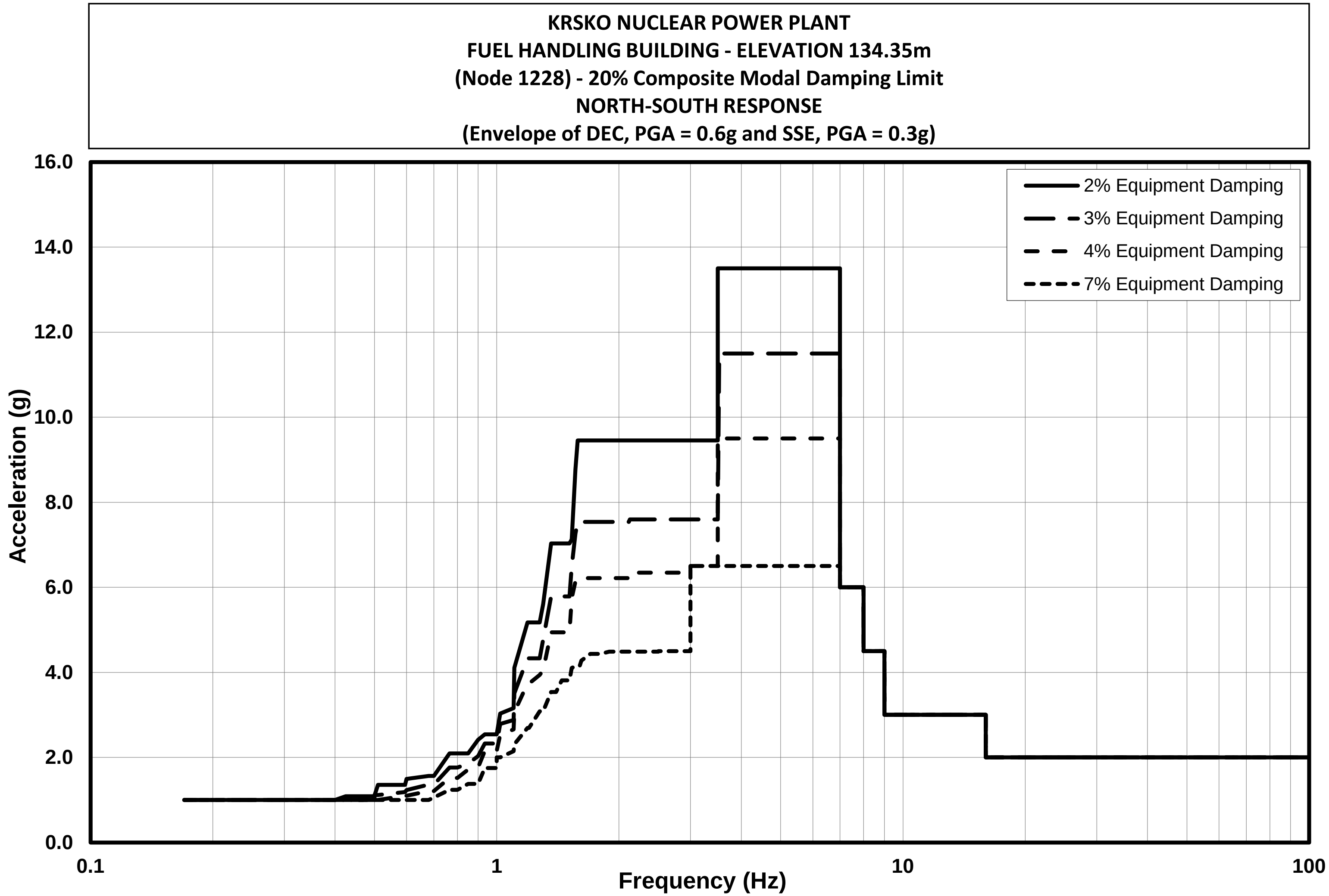

KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 134.35m
(Node 1228) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C73

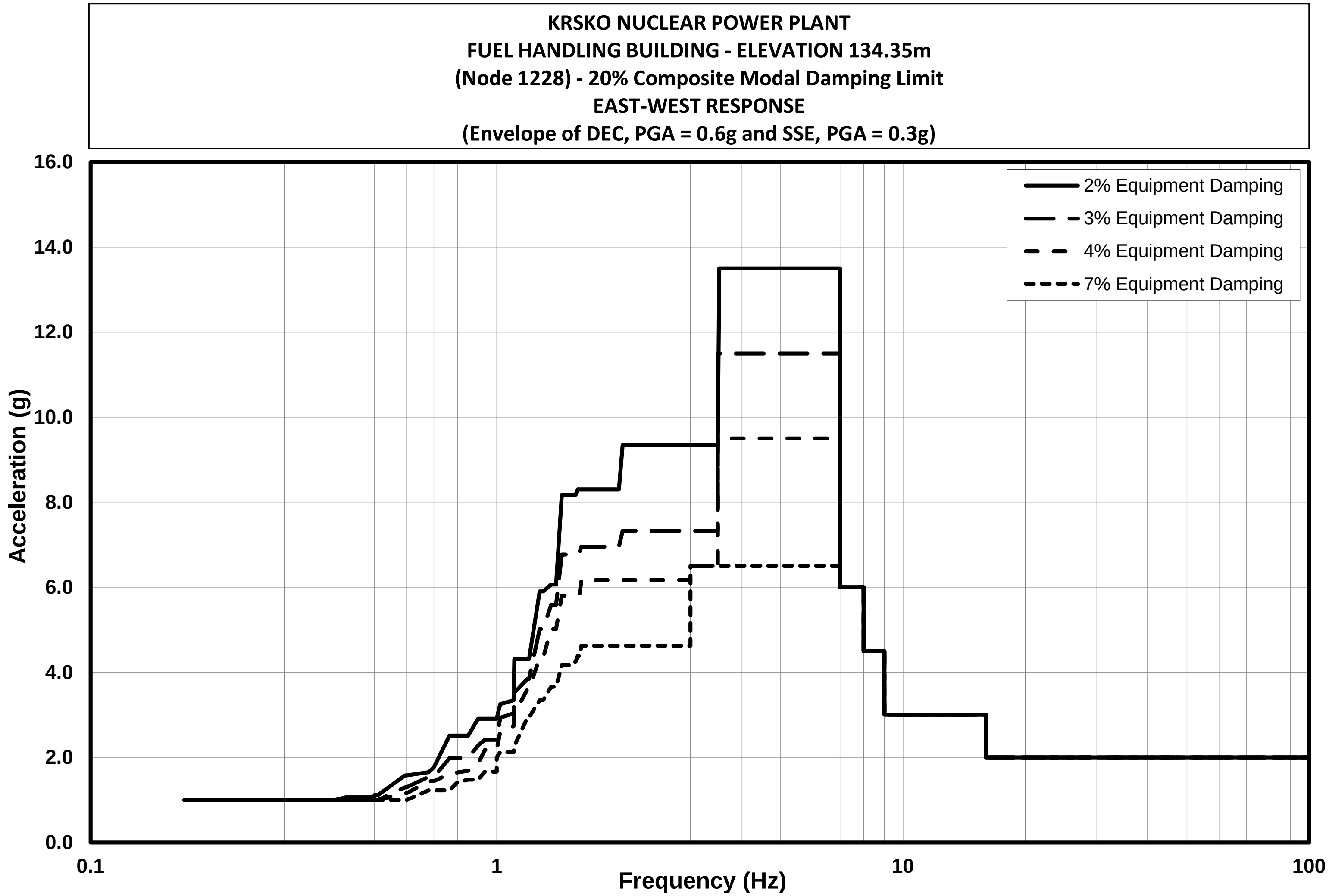
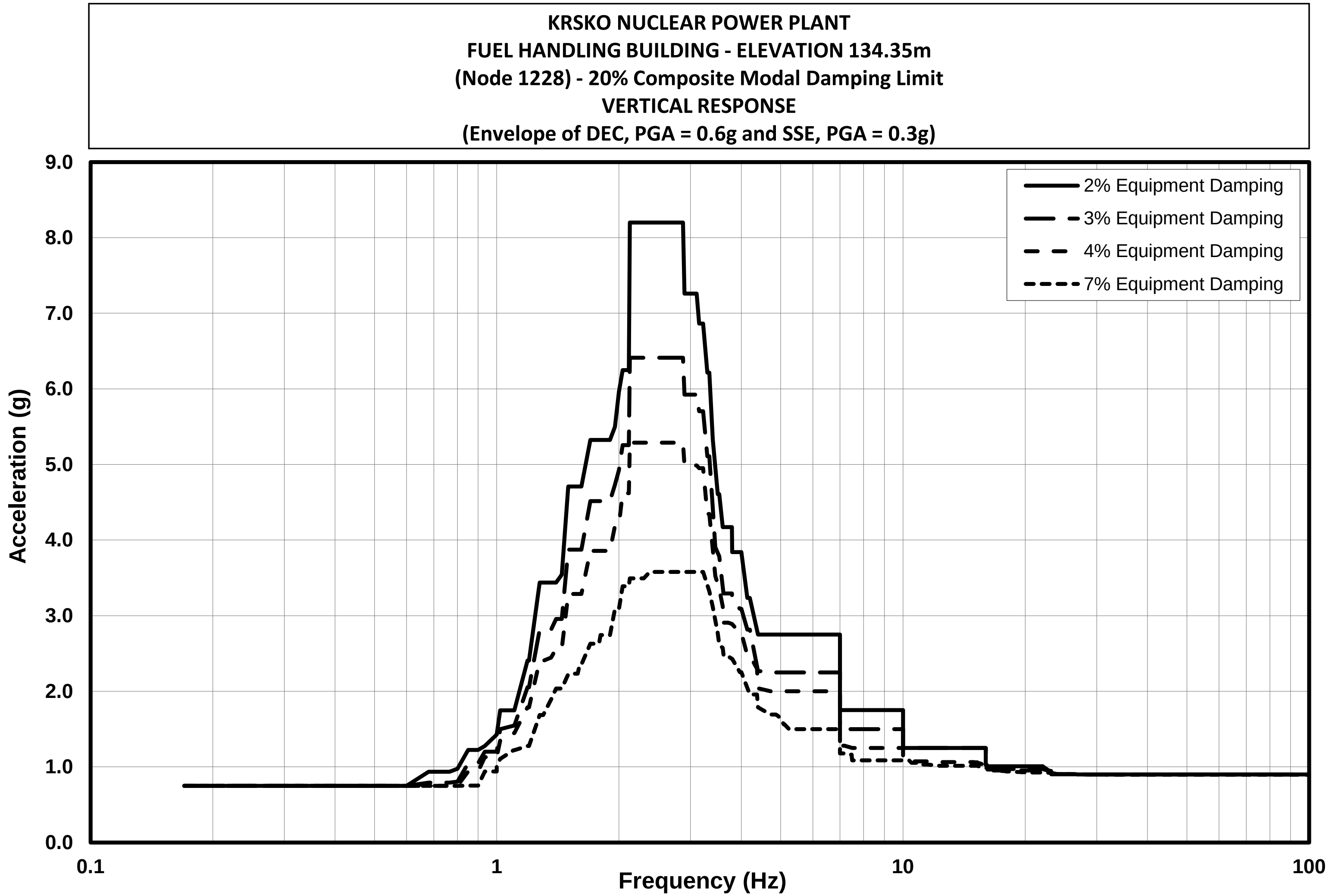
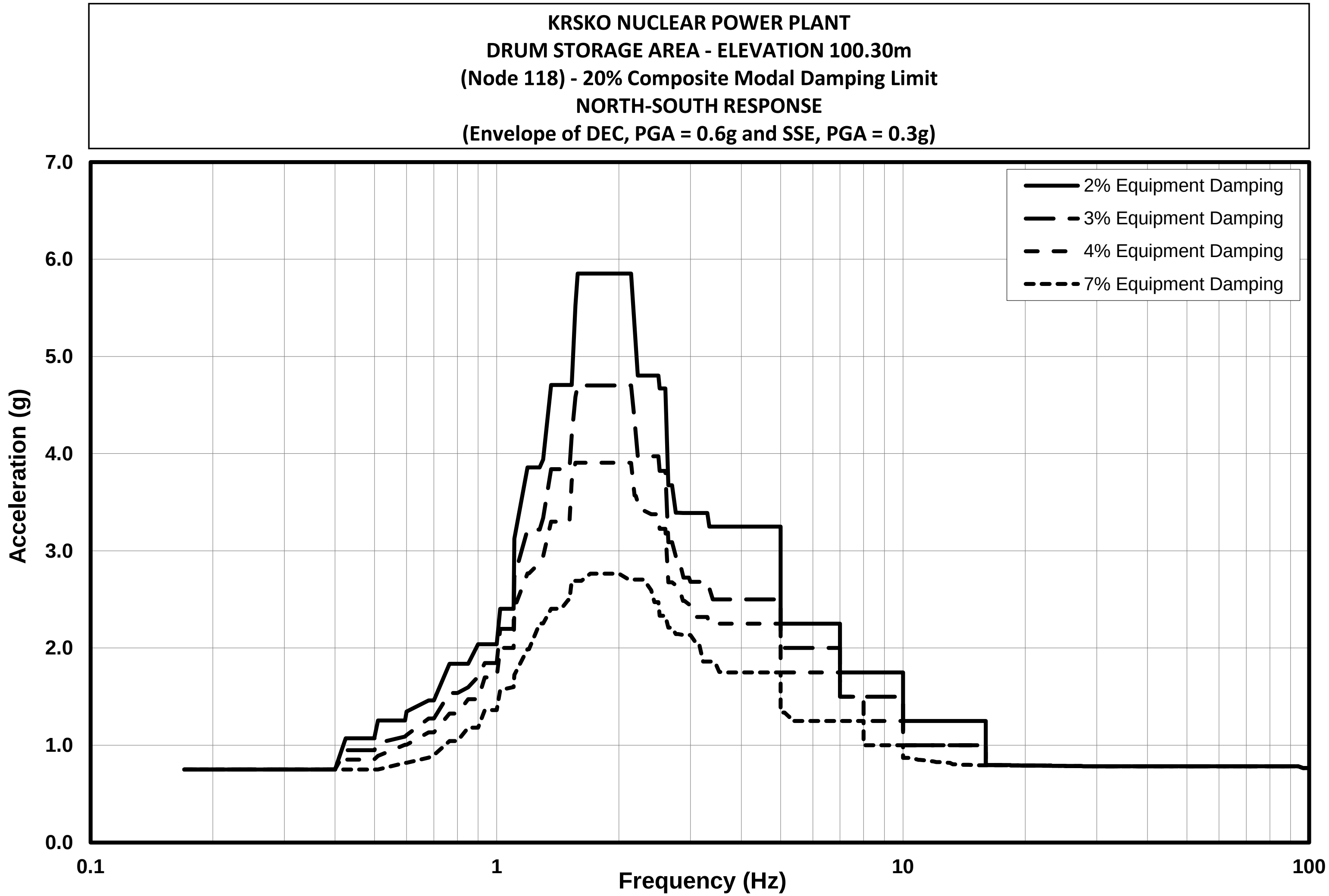
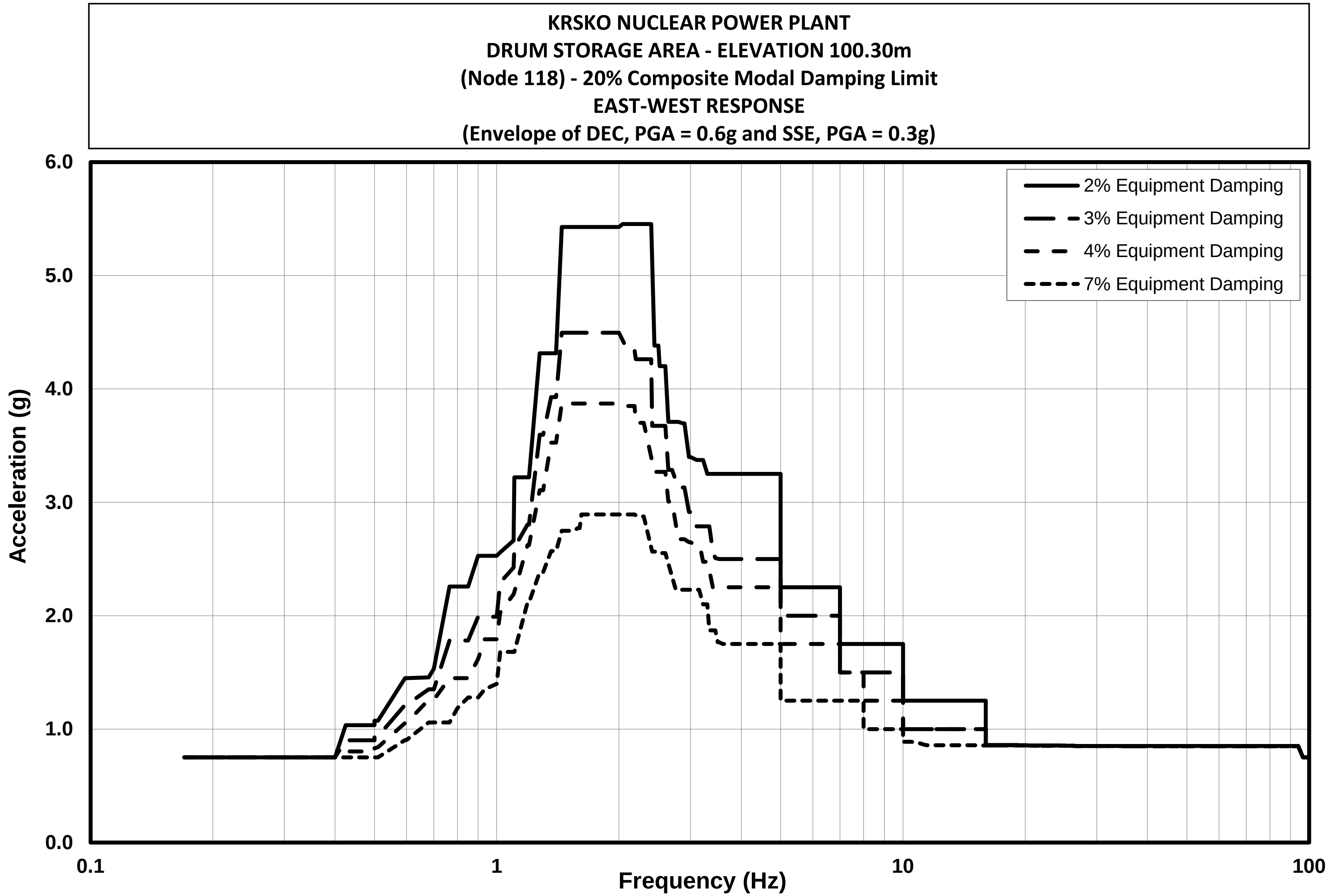

KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 134.35m
(Node 1228) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

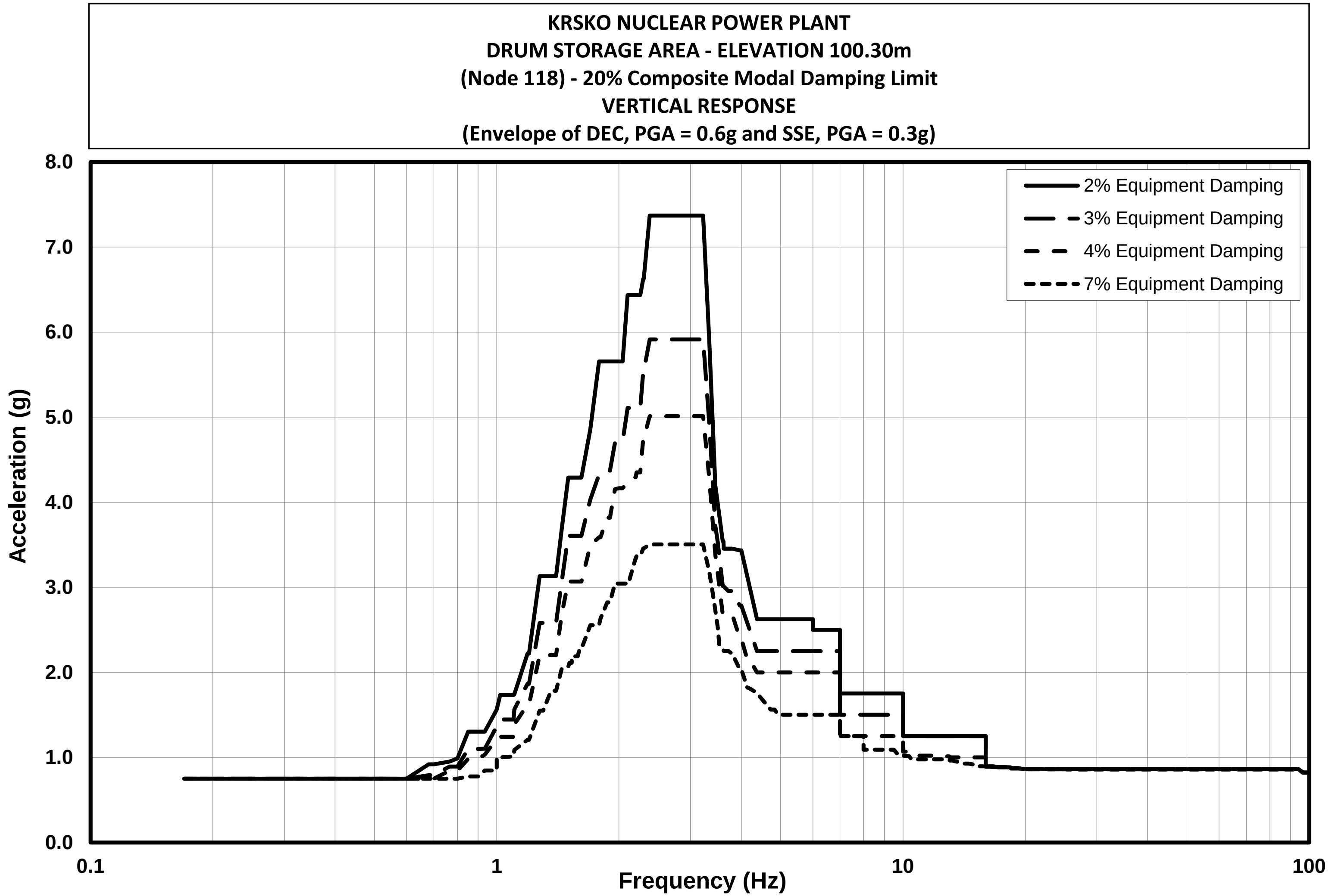
Figure C74



KRSKO NUCLEAR POWER PLANT
FUEL HANDLING BUILDING - ELEVATION 134.35m
(Node 1228) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 100.30m
(Node 118) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 100.30m
(Node 118) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 100.30m
(Node 118) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

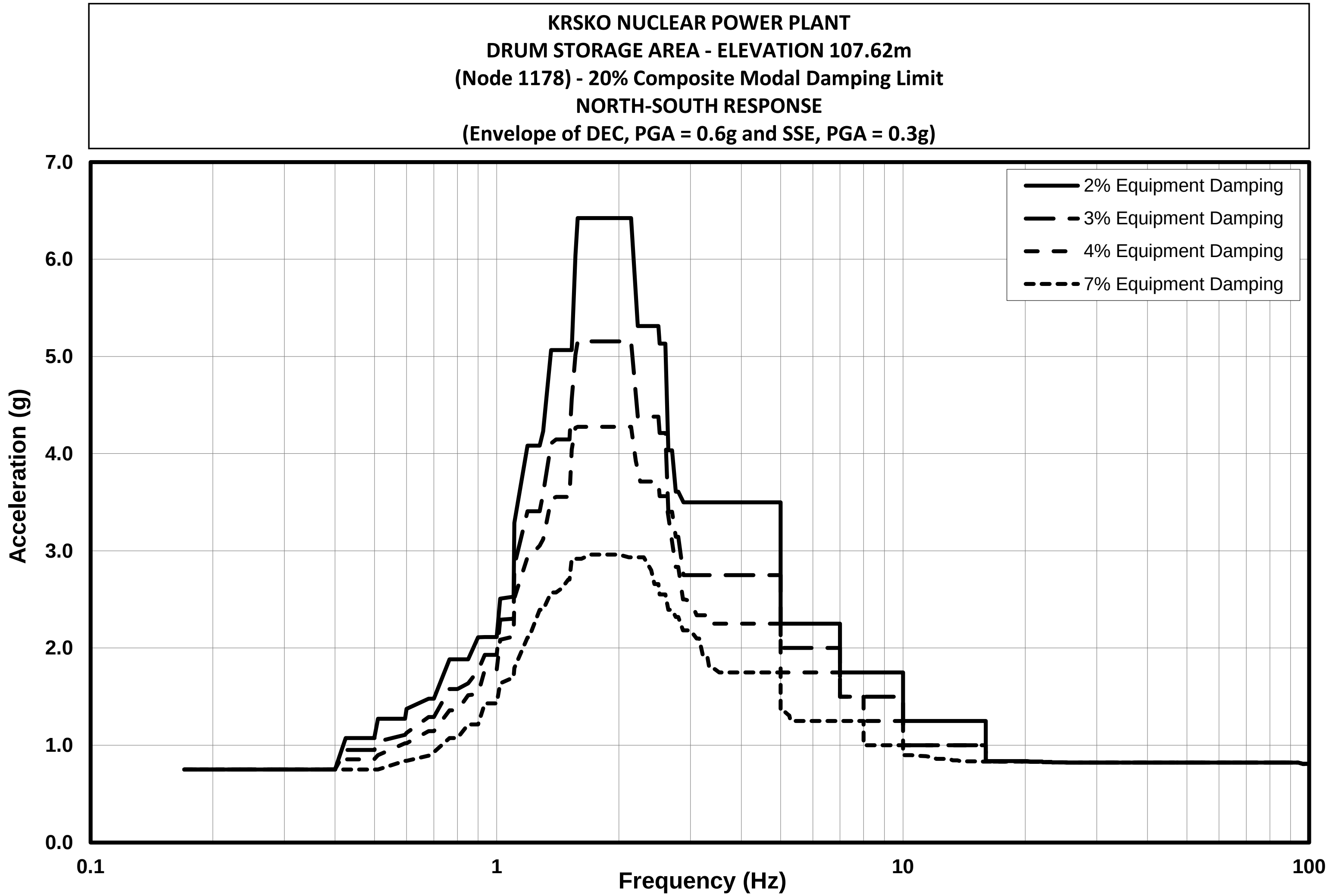
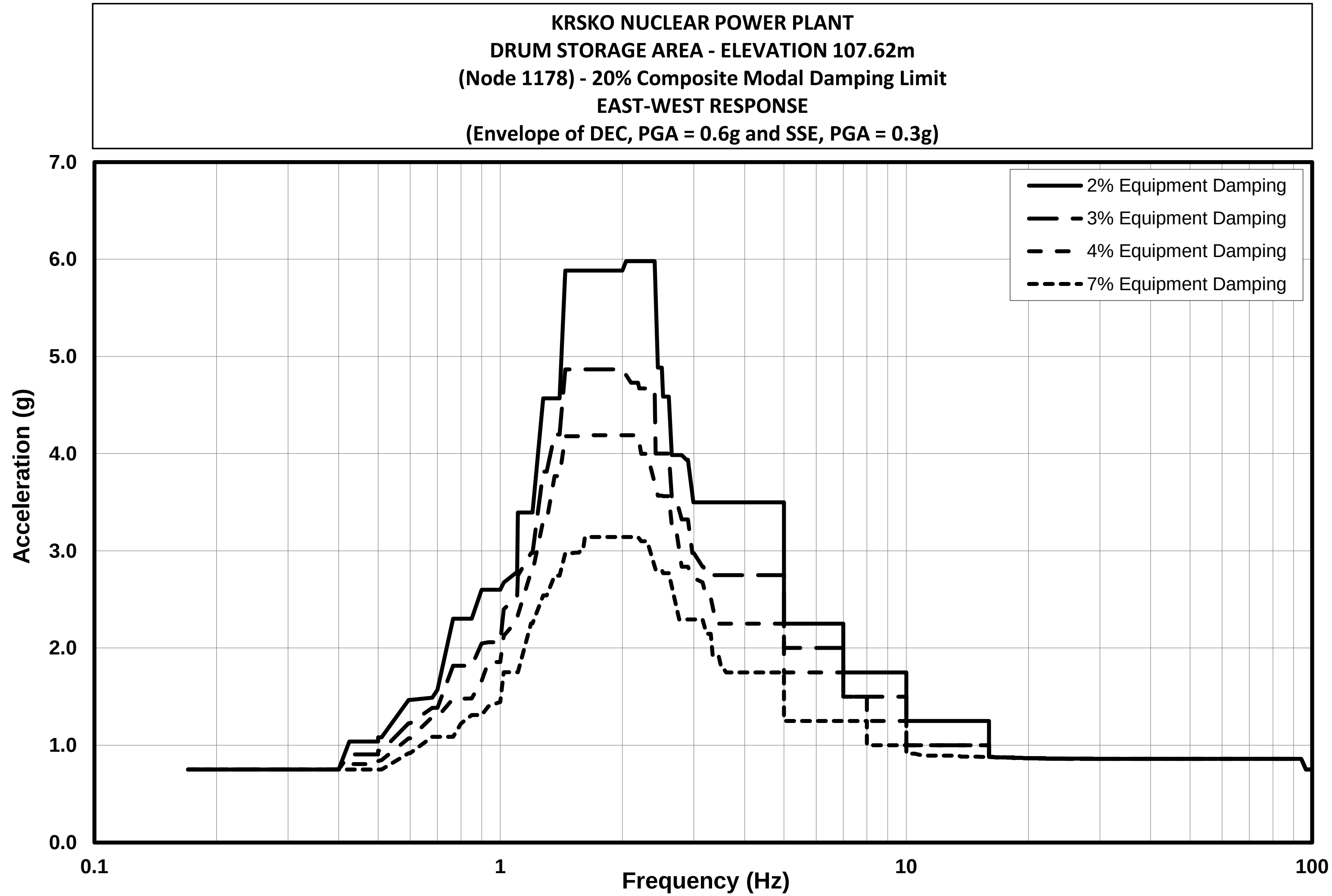

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 107.62m
(Node 1178) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C79


KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 107.62m
(Node 1178) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

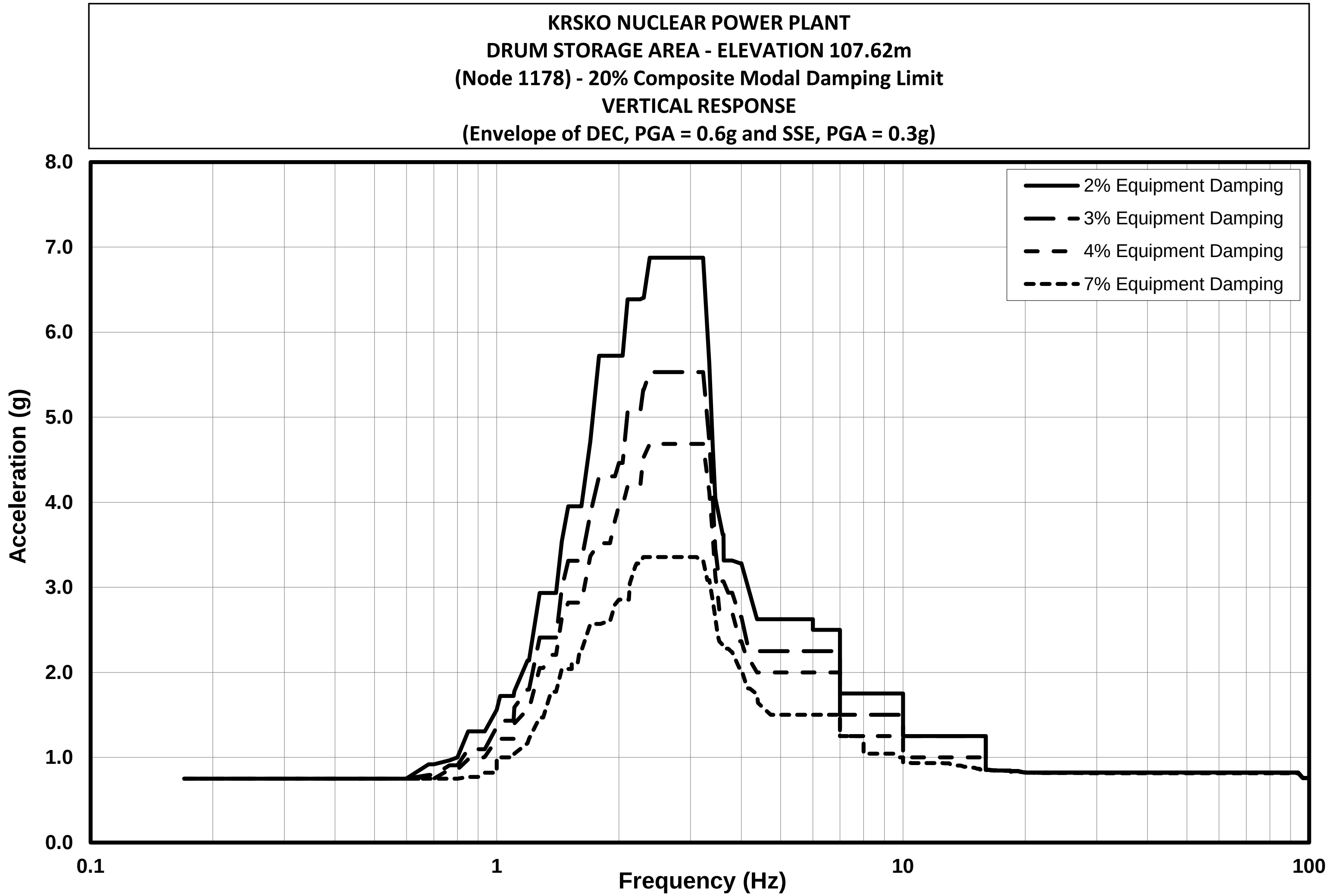

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 107.62m
(Node 1178) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100

Figure C81

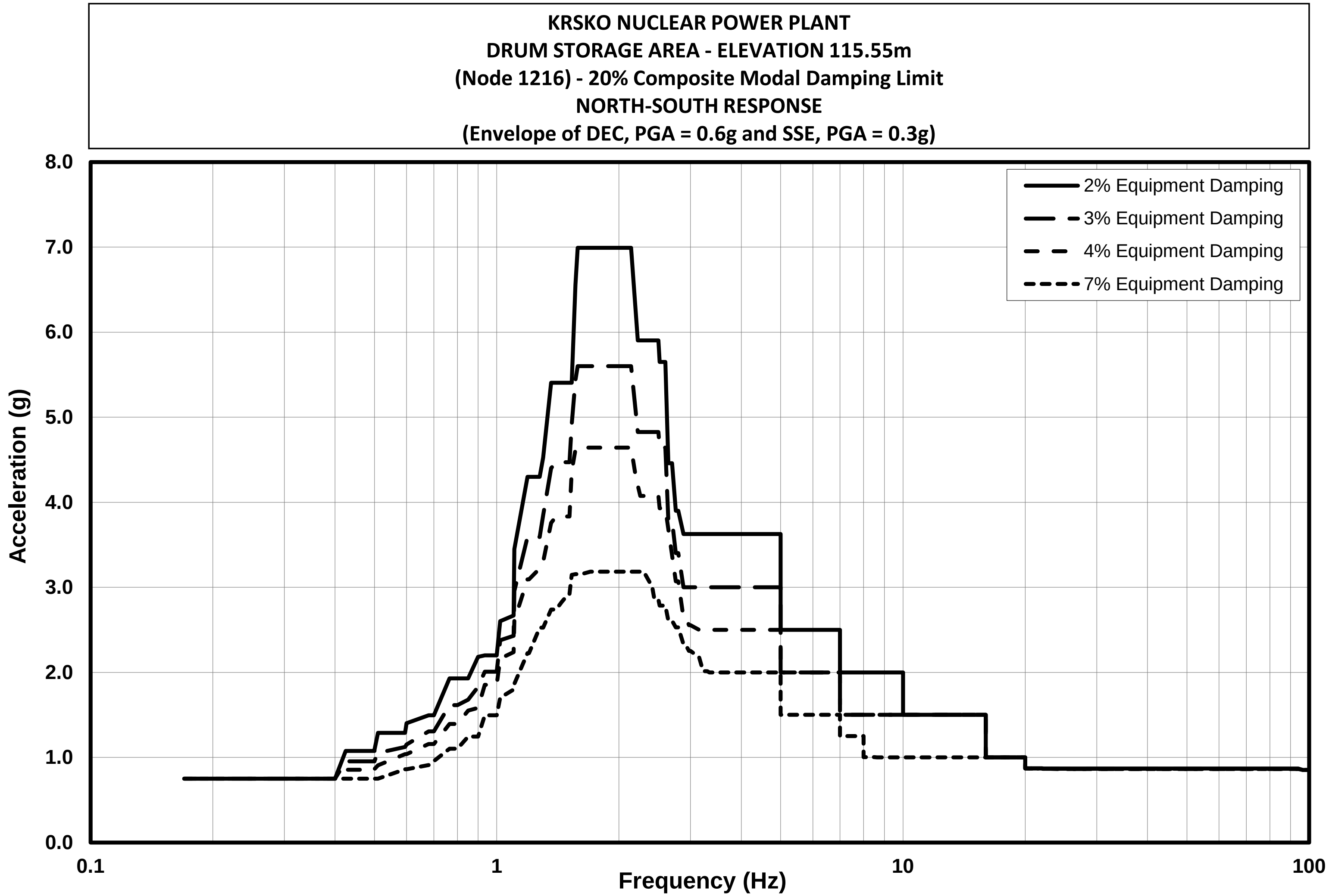

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 115.55m
(Node 1216) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100

Figure C82

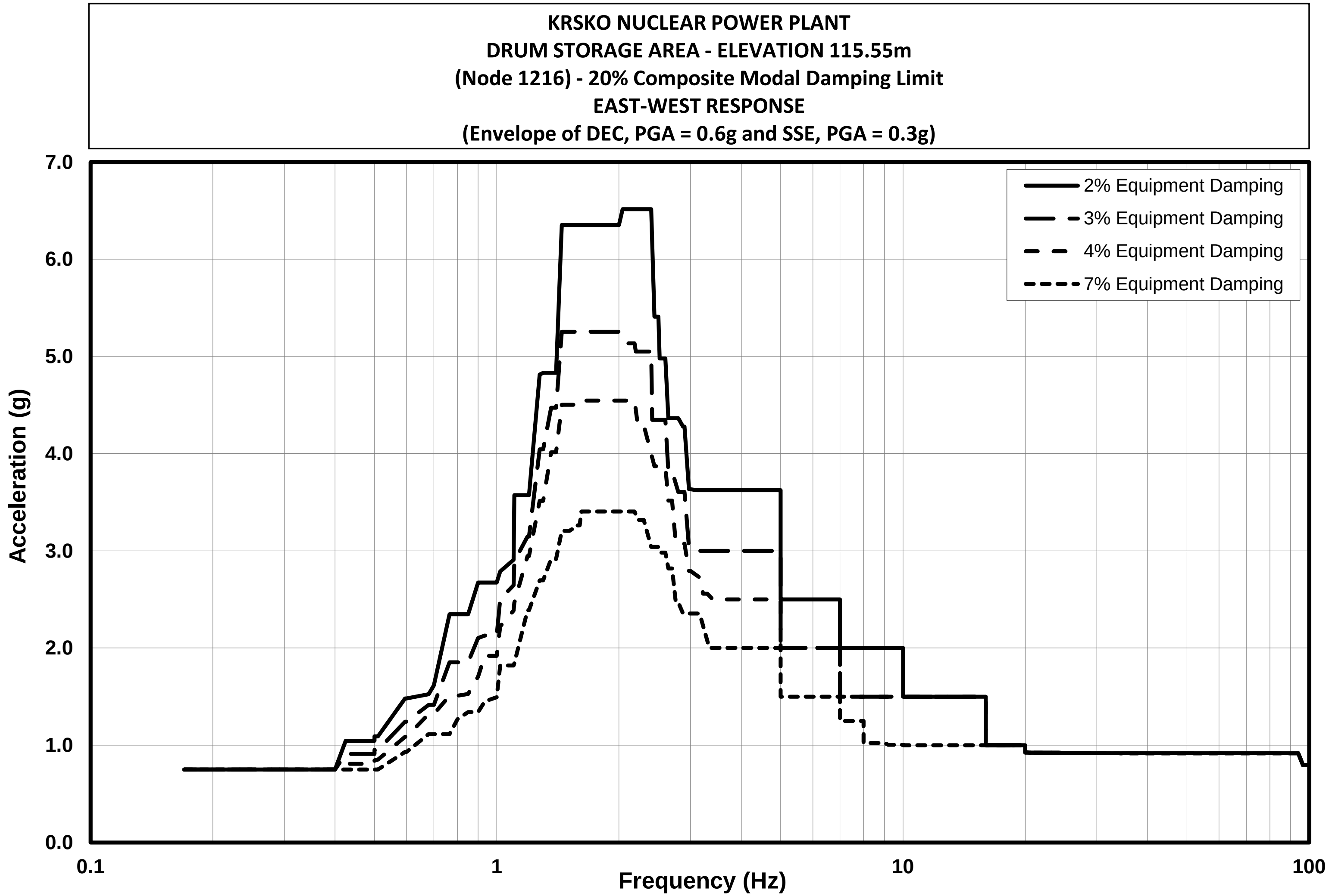

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 115.55m
(Node 1216) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100

Figure C83

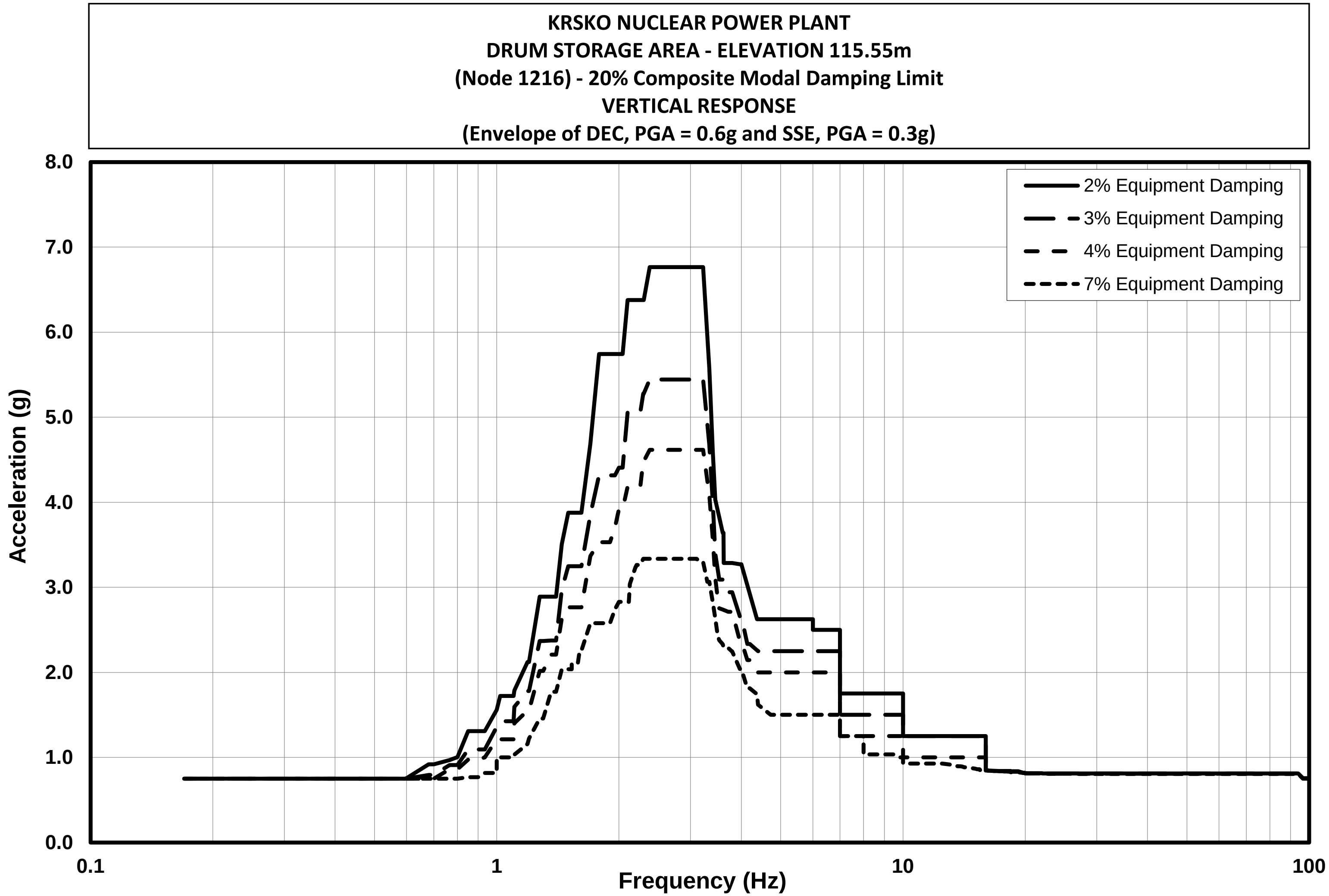
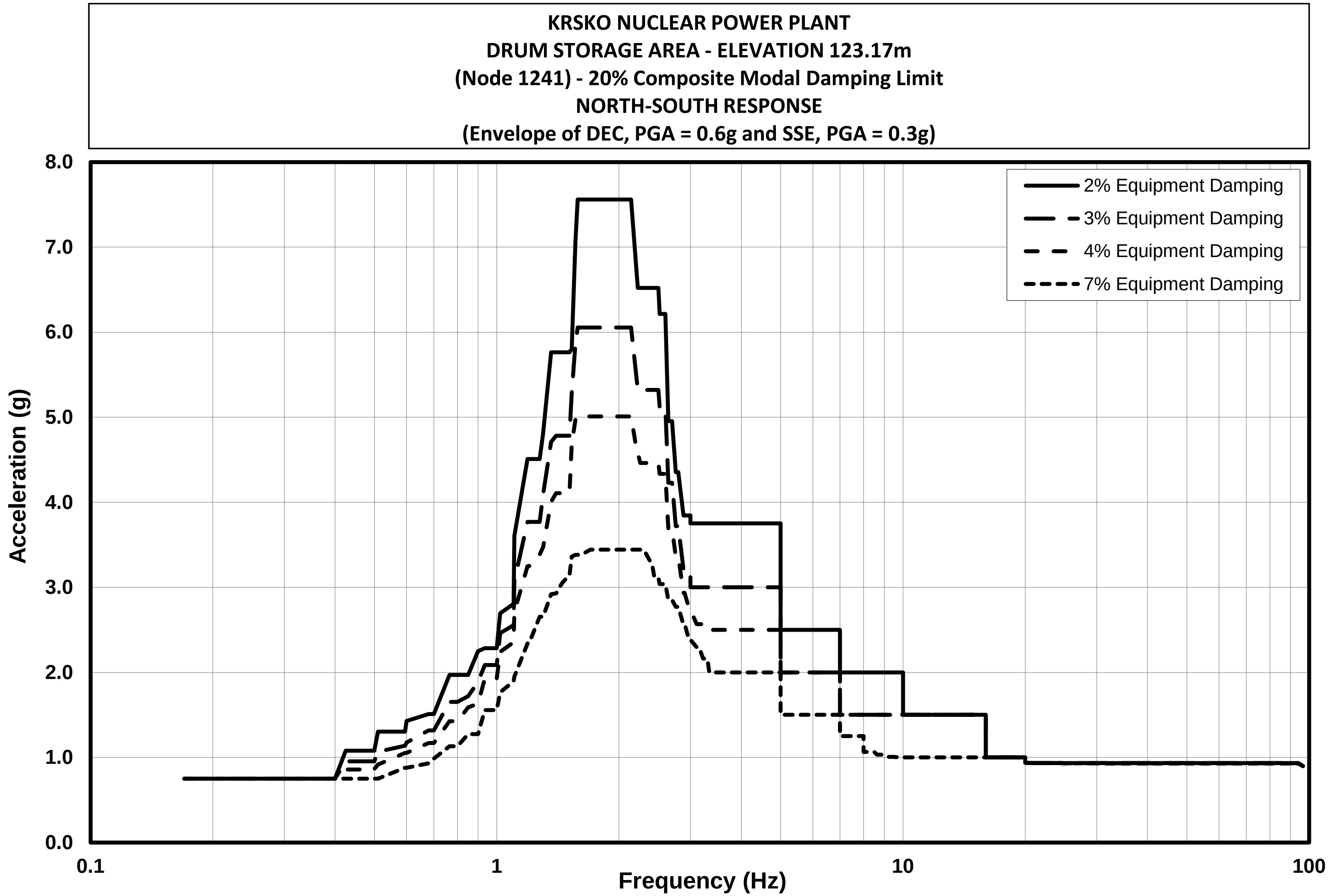

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 115.55m
(Node 1216) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Frequency (Hz)
0.1
1
10
100

Figure C84


KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 123.17m
(Node 1241) - 20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

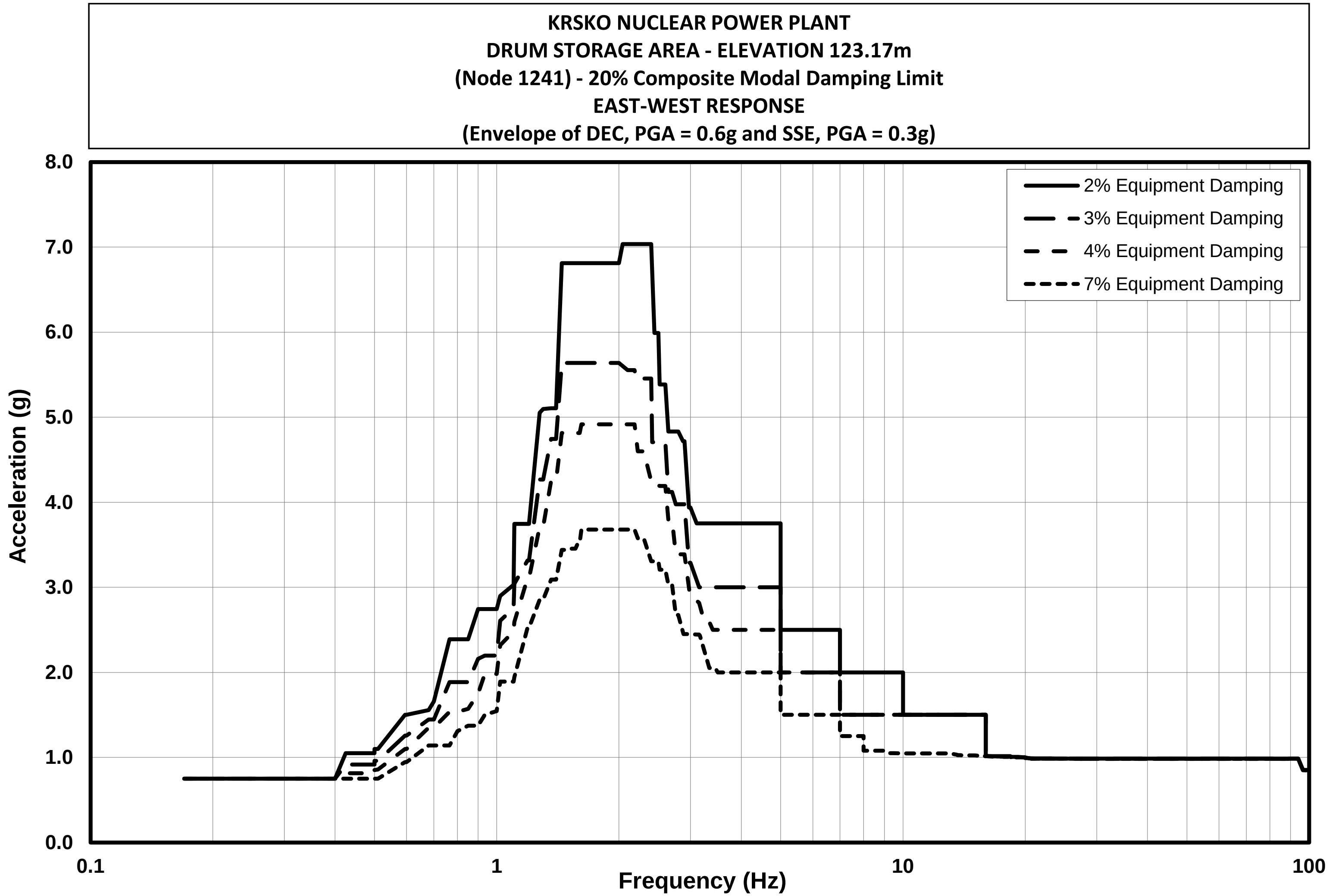
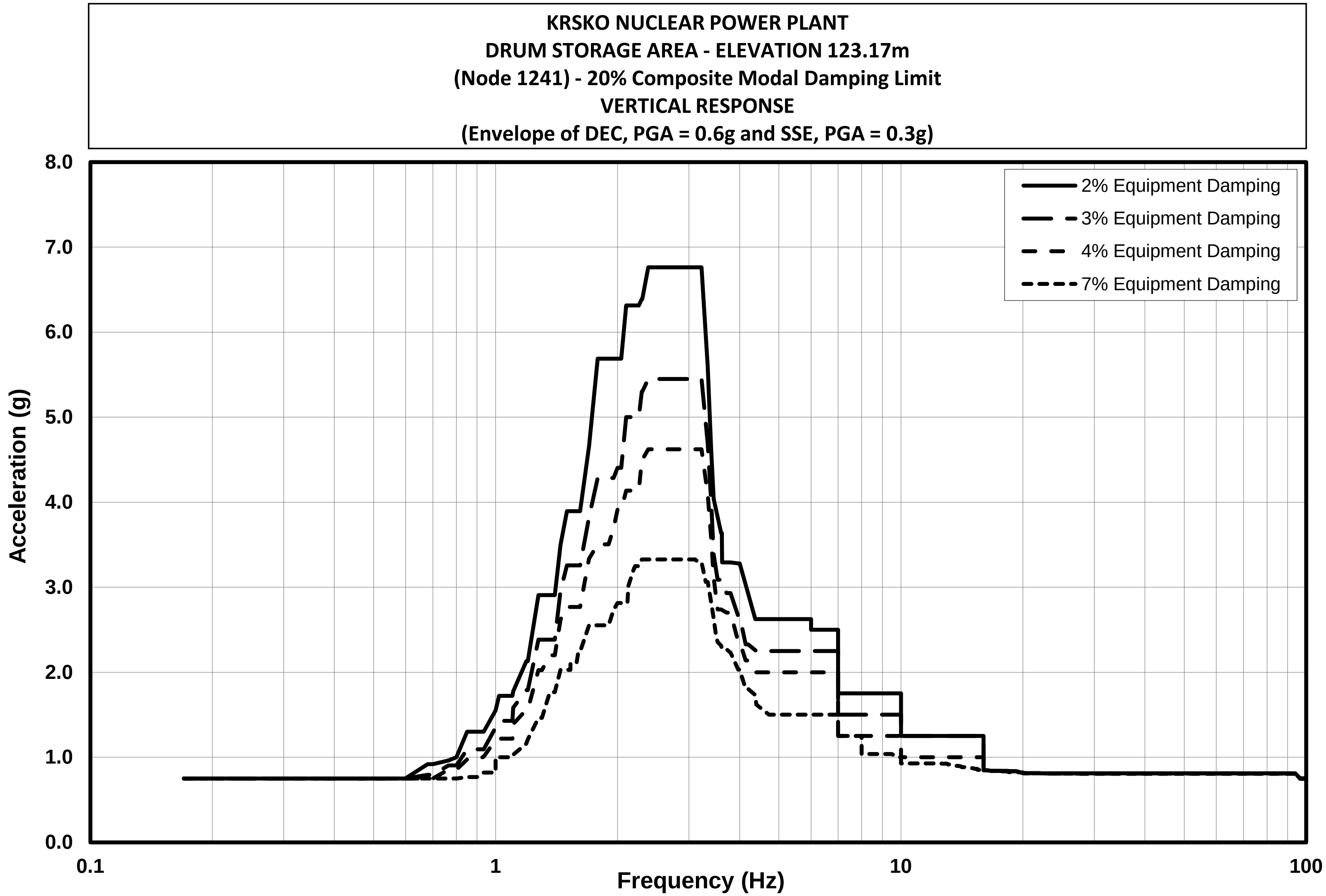
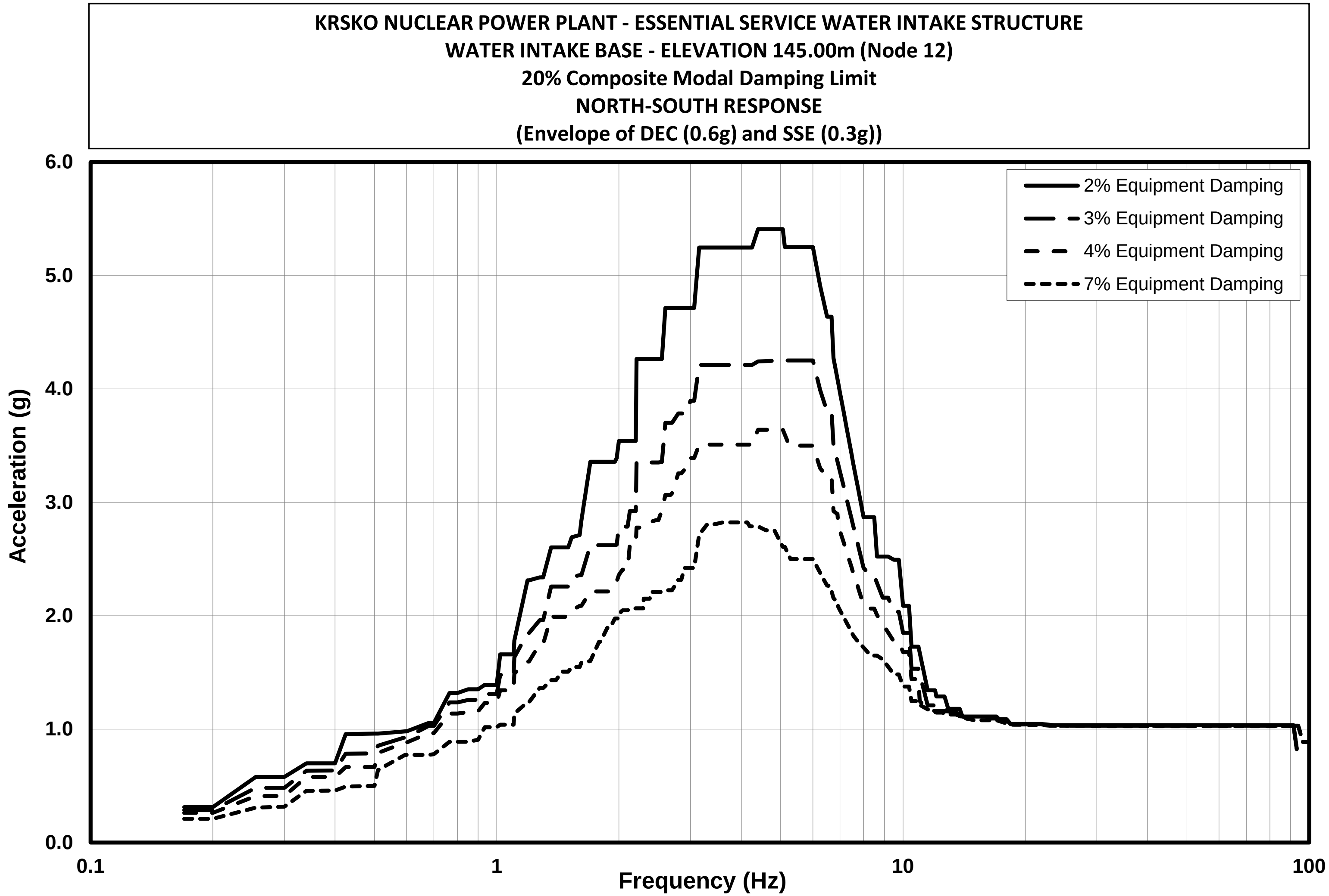

KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 123.17m
(Node 1241) - 20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100
Frequency (Hz)

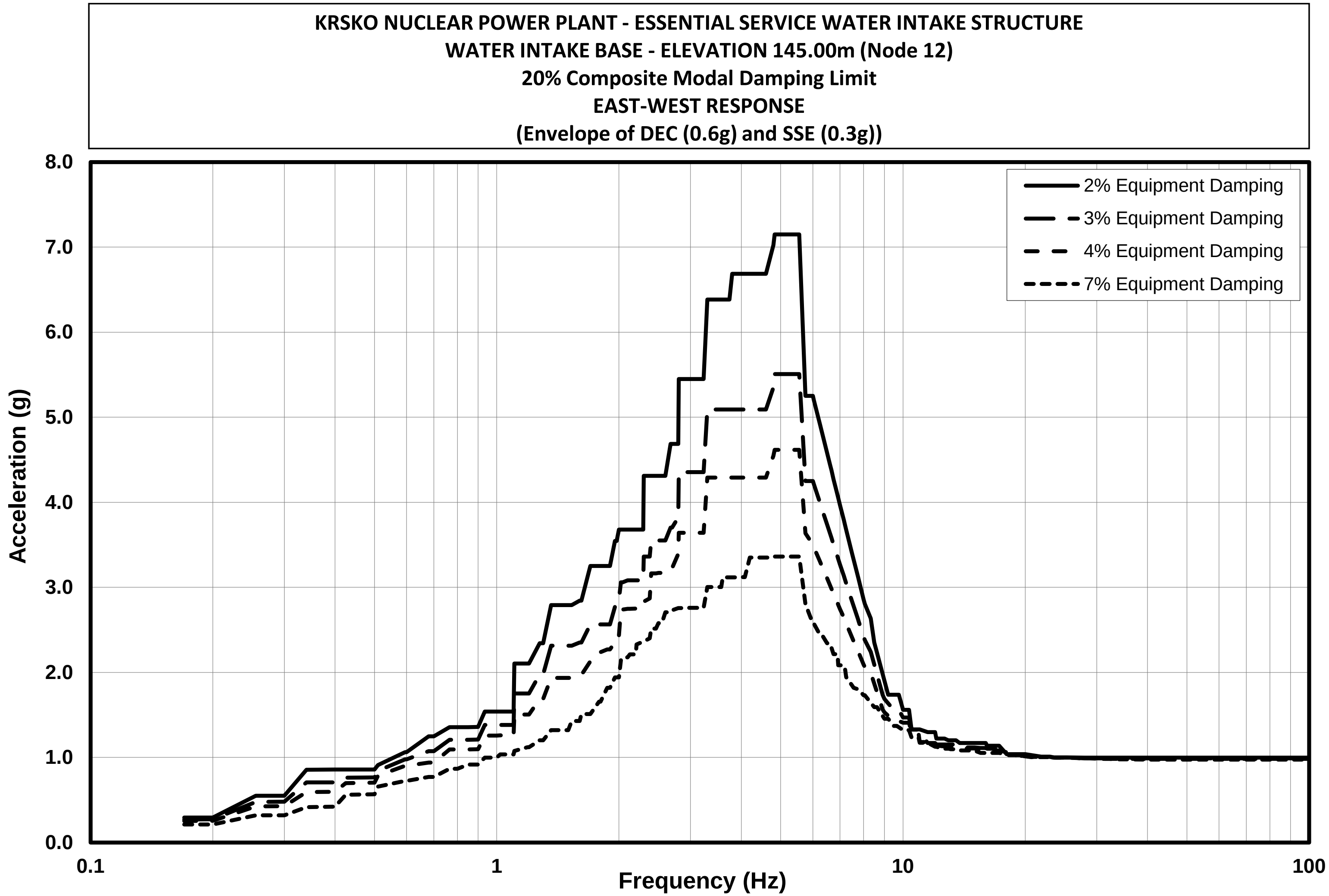
Figure C86

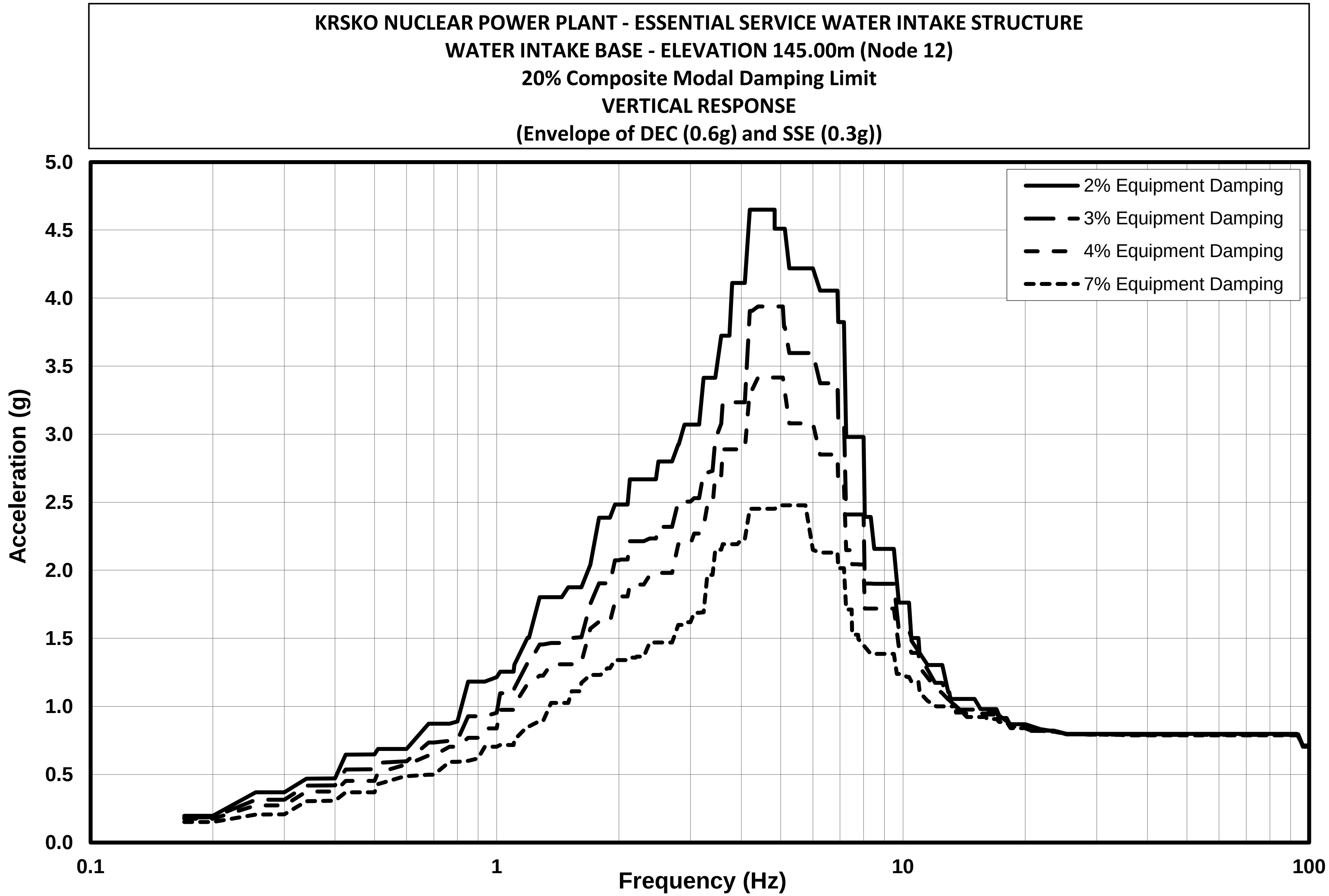


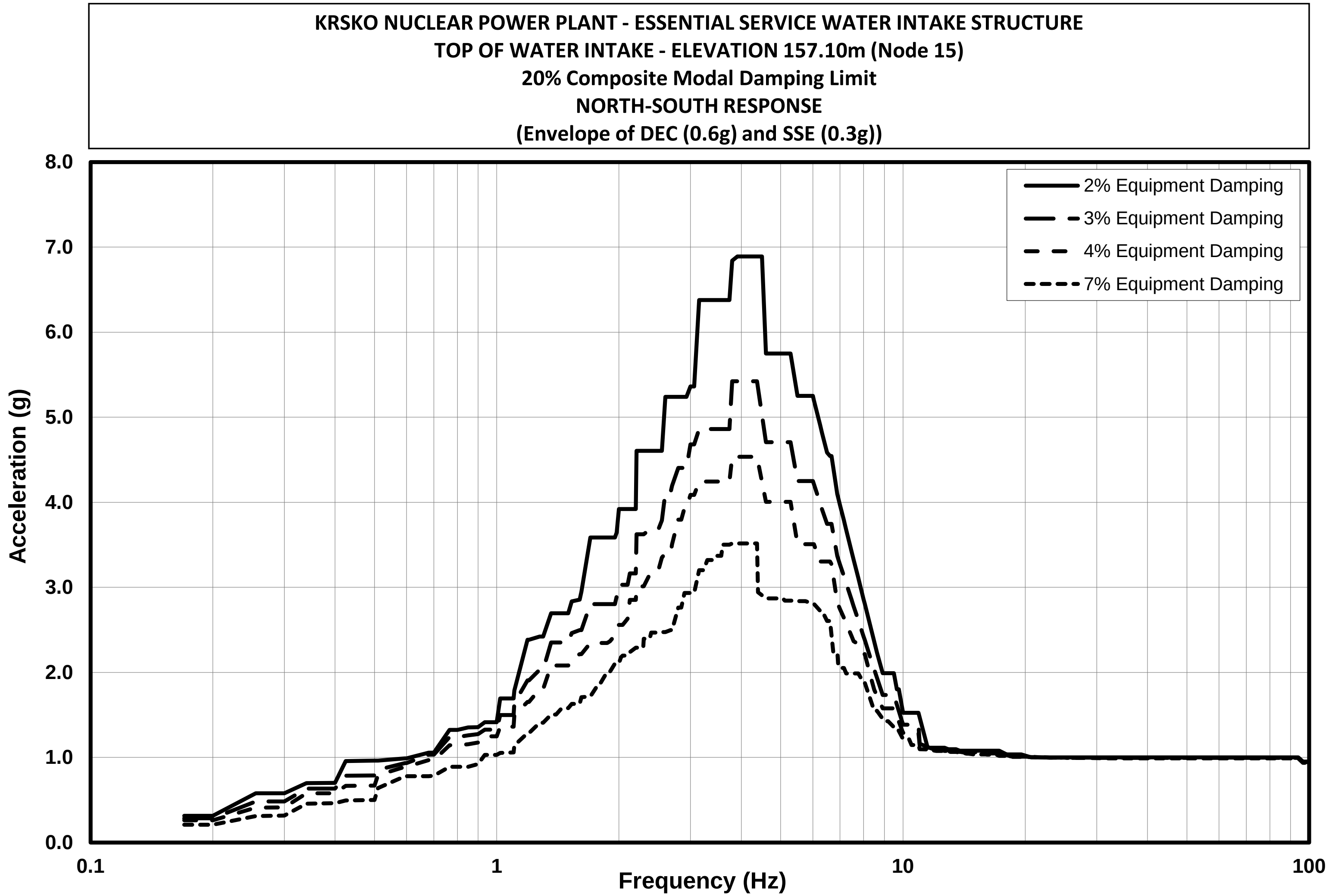
KRSKO NUCLEAR POWER PLANT
DRUM STORAGE AREA - ELEVATION 123.17m
(Node 1241) - 20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

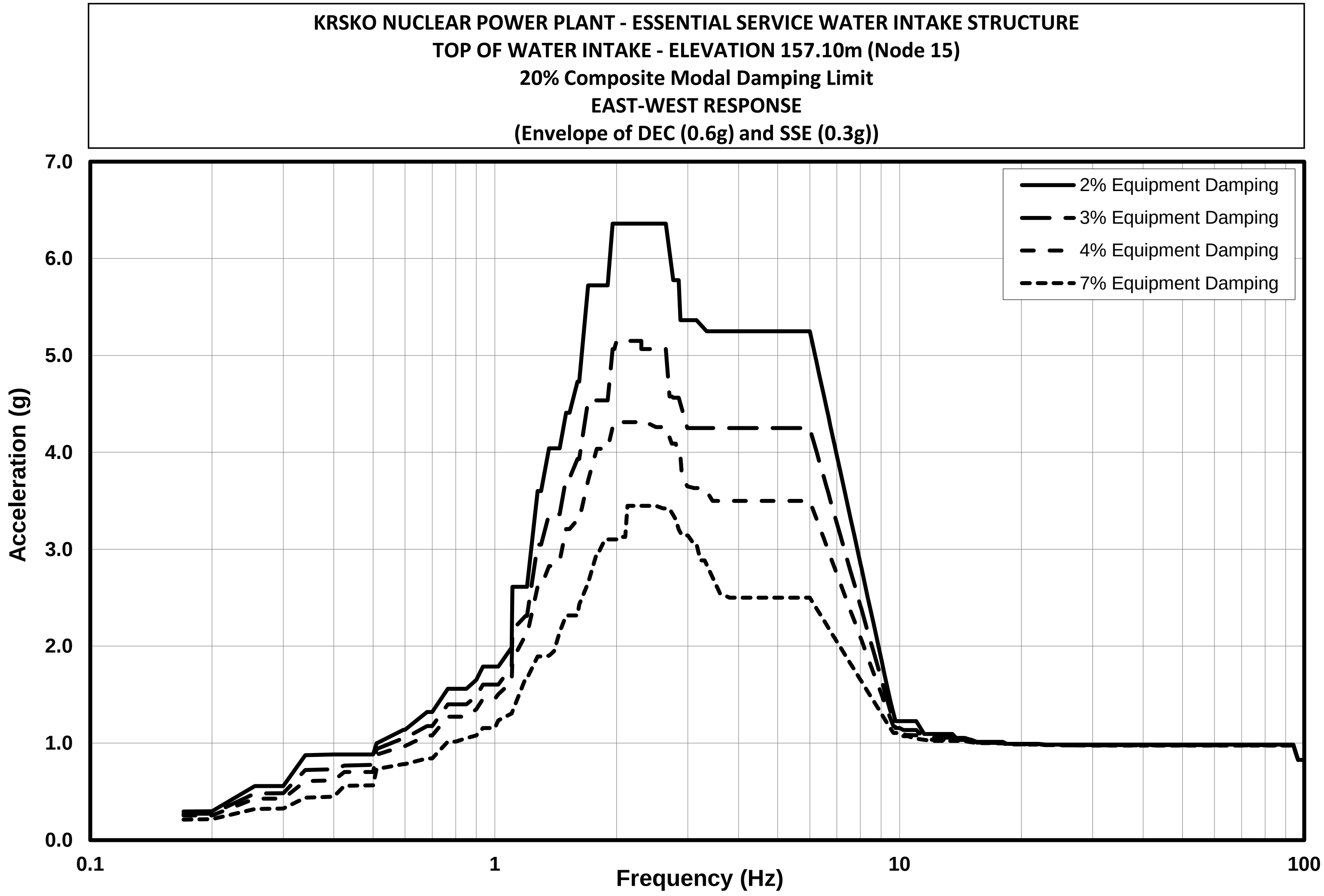
Figure C87

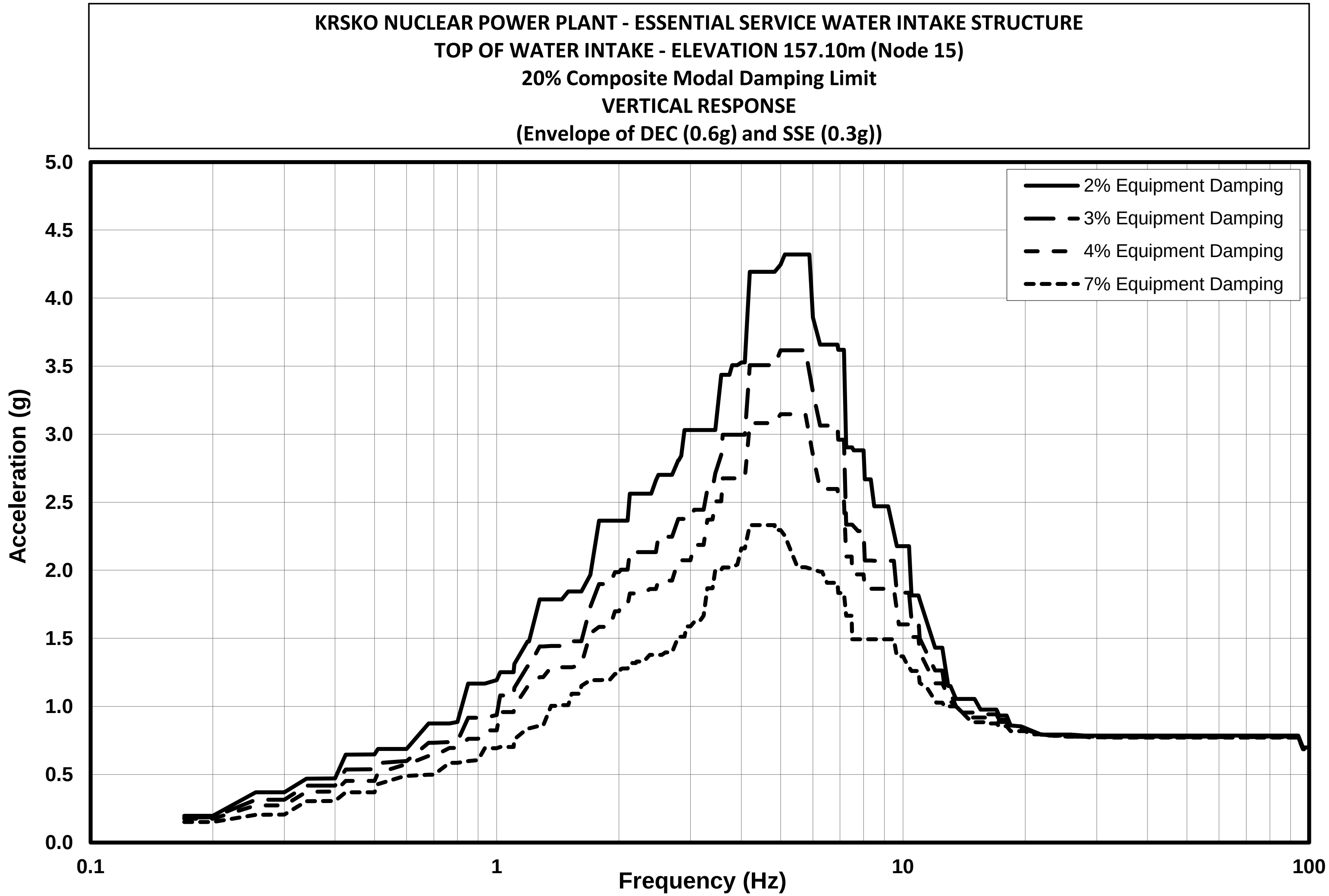

KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
WATER INTAKE BASE - ELEVATION 145.00m (Node 12)
20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

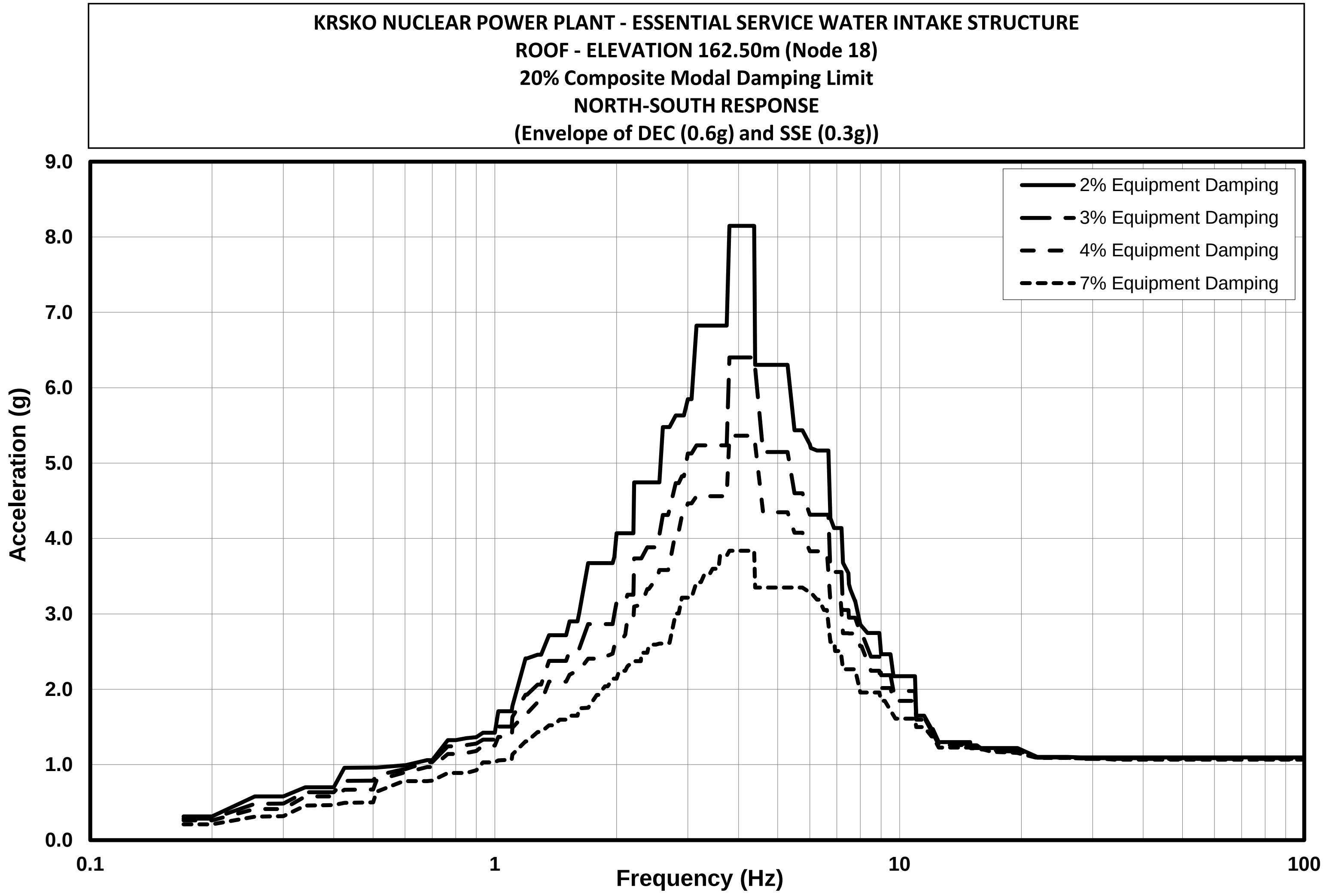

KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
WATER INTAKE BASE - ELEVATION 145.00m (Node 12)
20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
WATER INTAKE BASE - ELEVATION 145.00m (Node 12)
20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
TOP OF WATER INTAKE - ELEVATION 157.10m (Node 15)
20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
TOP OF WATER INTAKE - ELEVATION 157.10m (Node 15)
20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
TOP OF WATER INTAKE - ELEVATION 157.10m (Node 15)
20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
ROOF - ELEVATION 162.50m (Node 18)
20% Composite Modal Damping Limit
NORTH-SOUTH RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

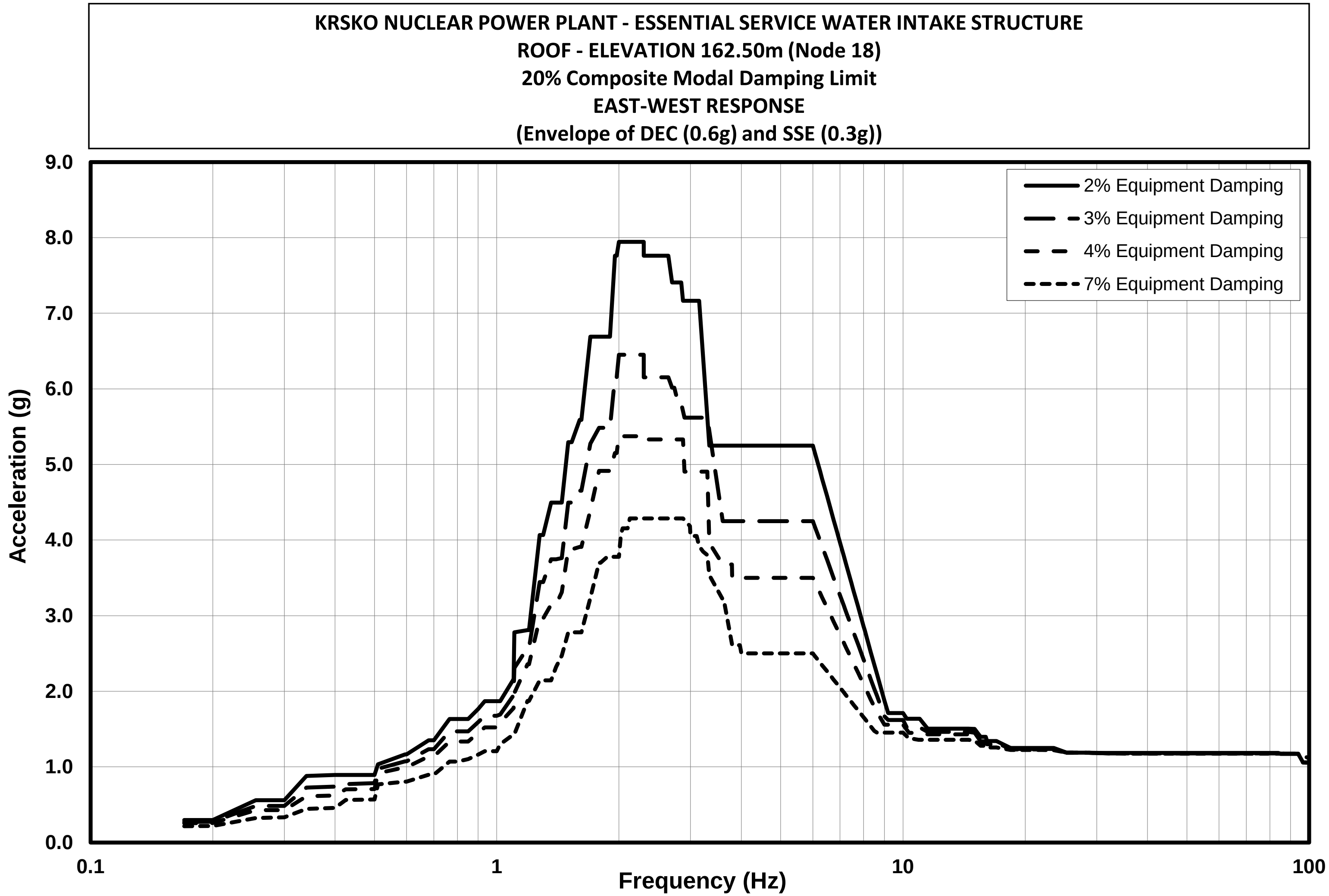
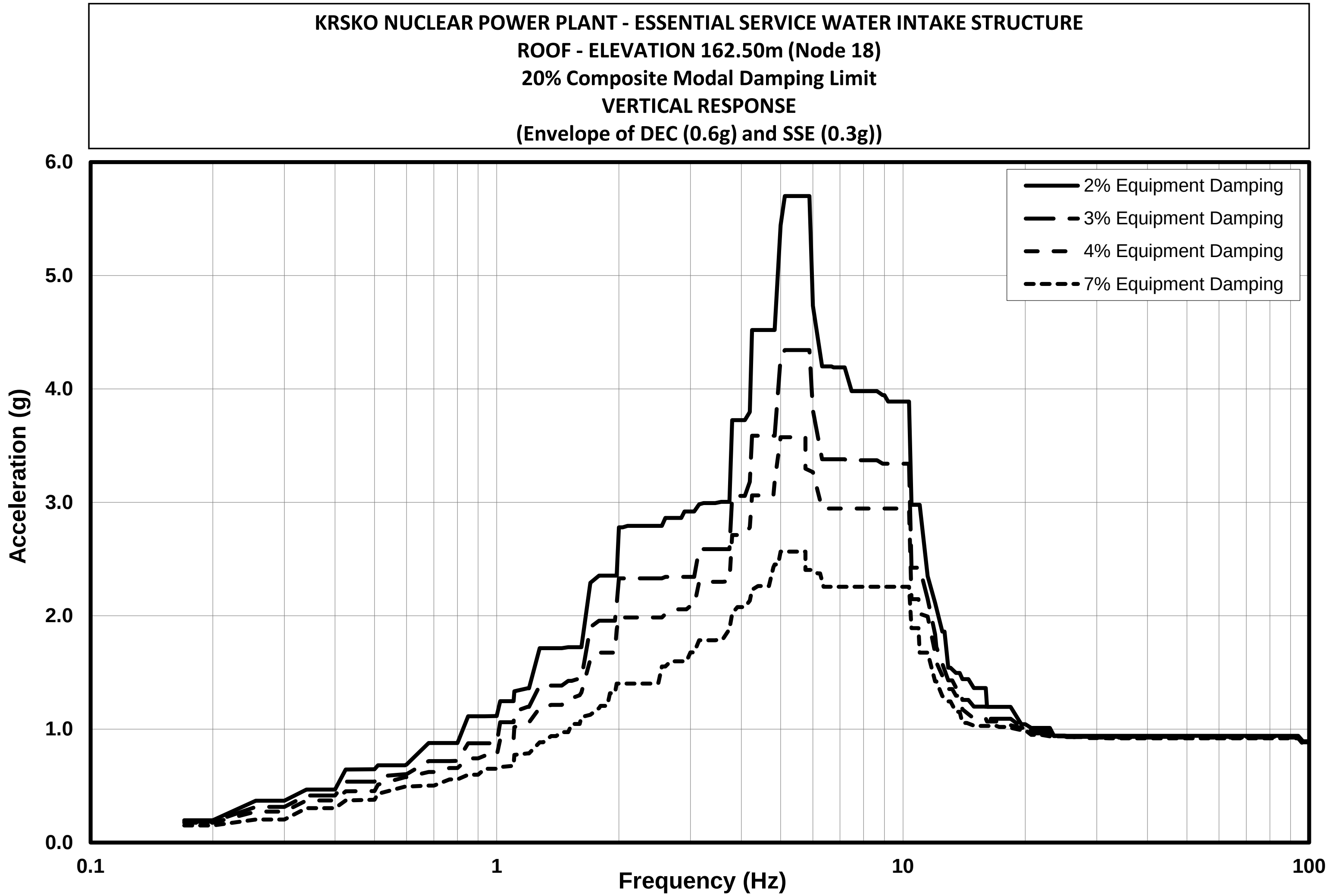

KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
ROOF - ELEVATION 162.50m (Node 18)
20% Composite Modal Damping Limit
EAST-WEST RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C95


KRSKO NUCLEAR POWER PLANT - ESSENTIAL SERVICE WATER INTAKE STRUCTURE
ROOF - ELEVATION 162.50m (Node 18)
20% Composite Modal Damping Limit
VERTICAL RESPONSE
(Envelope of DEC (0.6g) and SSE (0.3g))
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

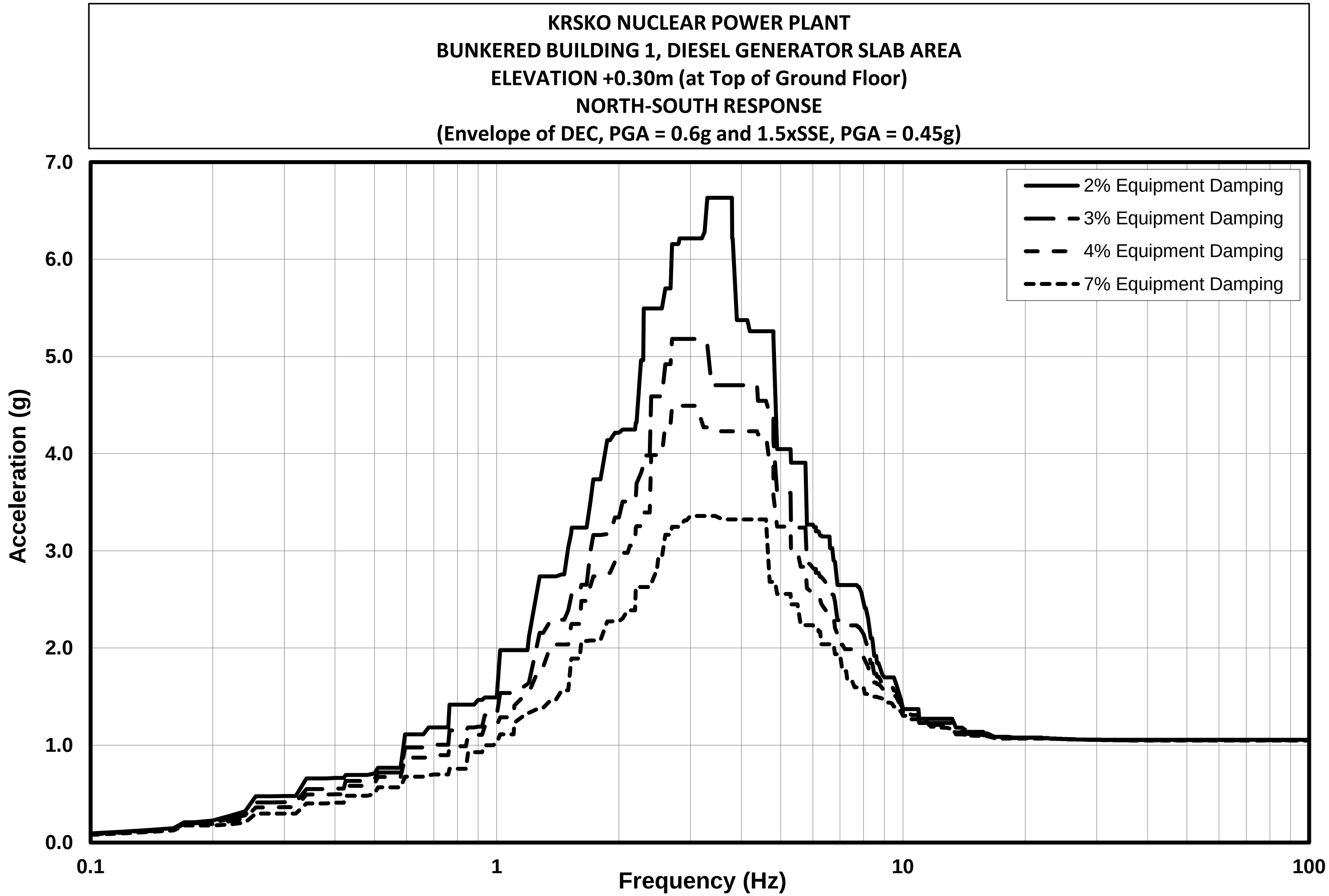
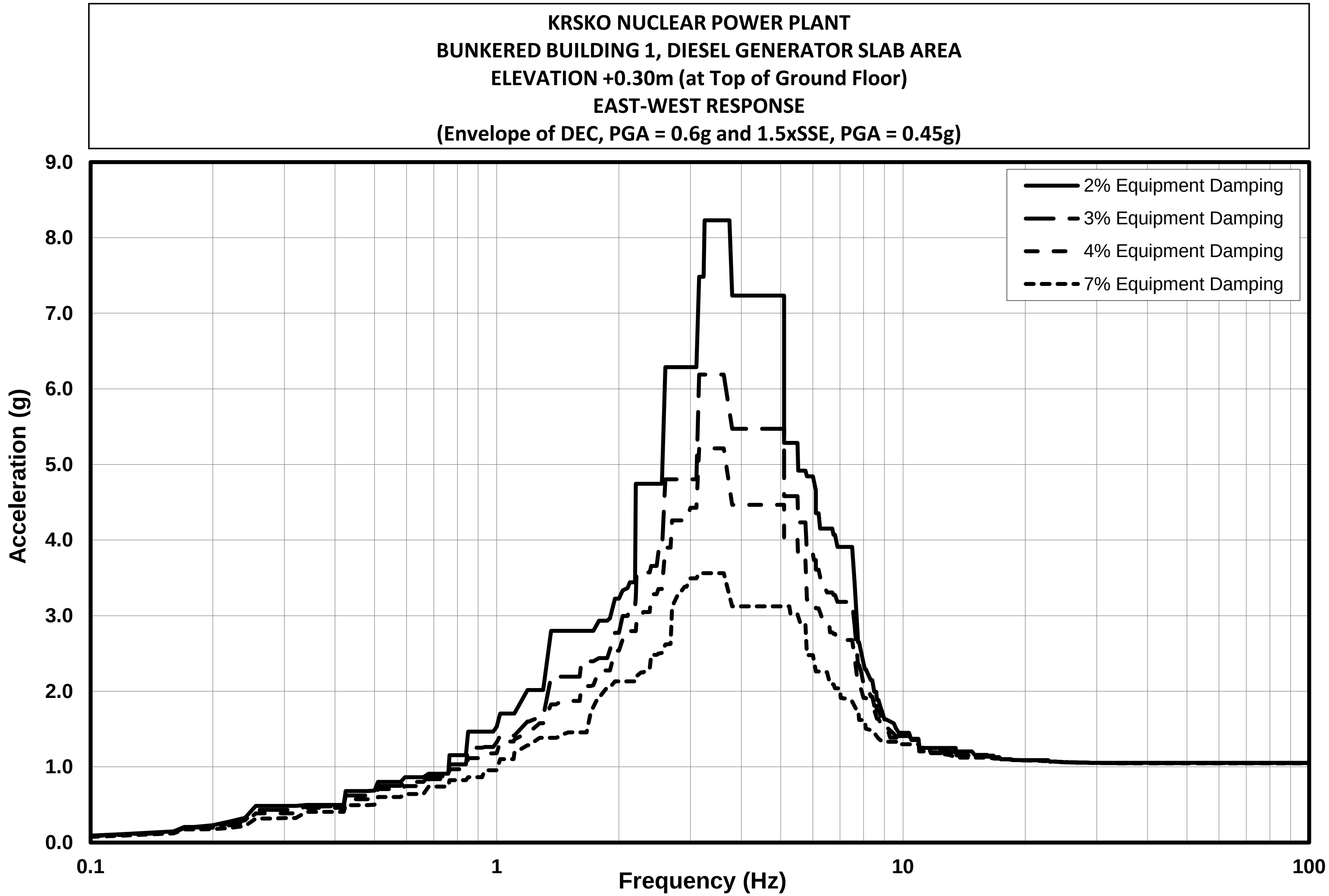

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR SLAB AREA
ELEVATION +0.30m (at Top of Ground Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C97


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR SLAB AREA
ELEVATION +0.30m (at Top of Ground Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

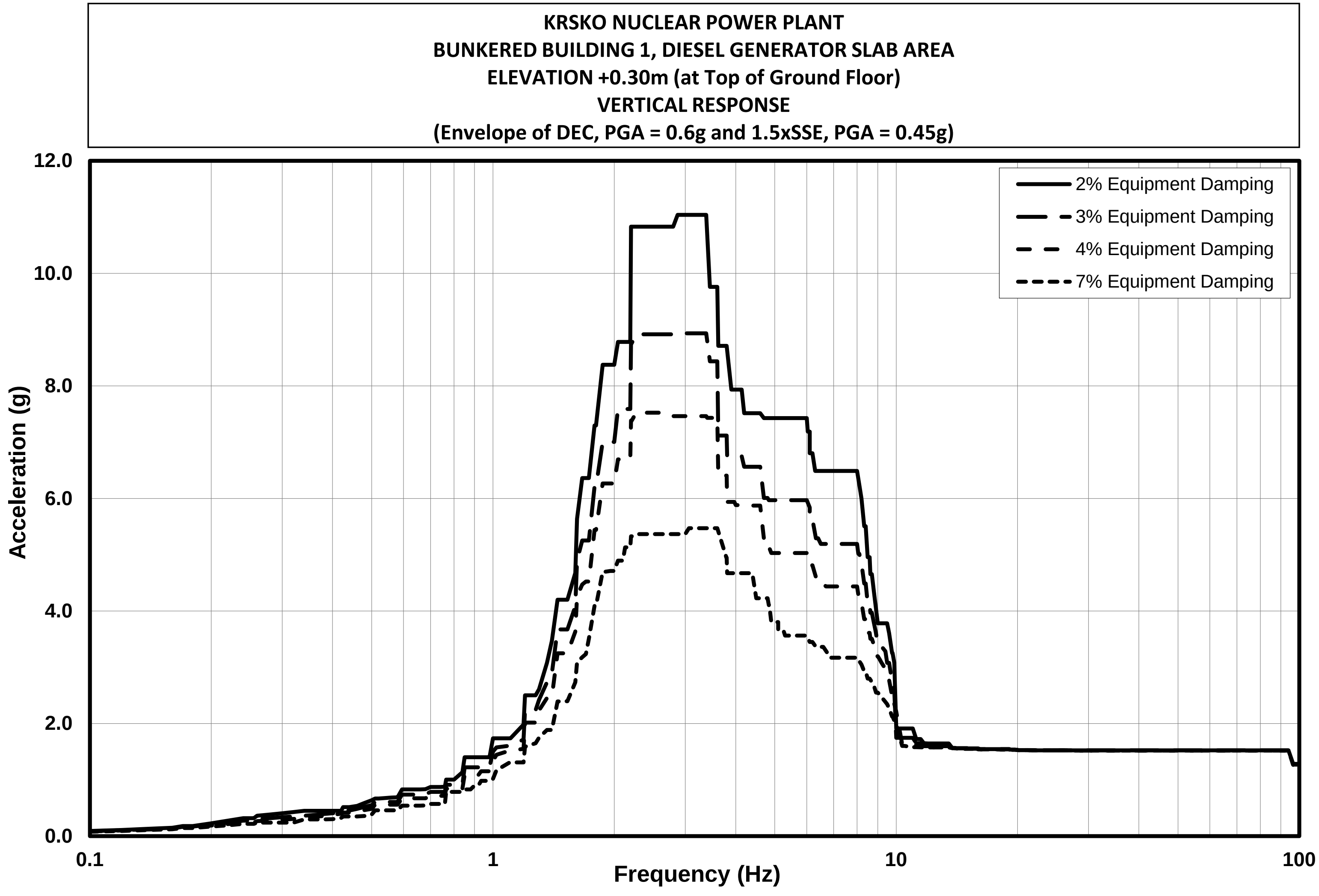
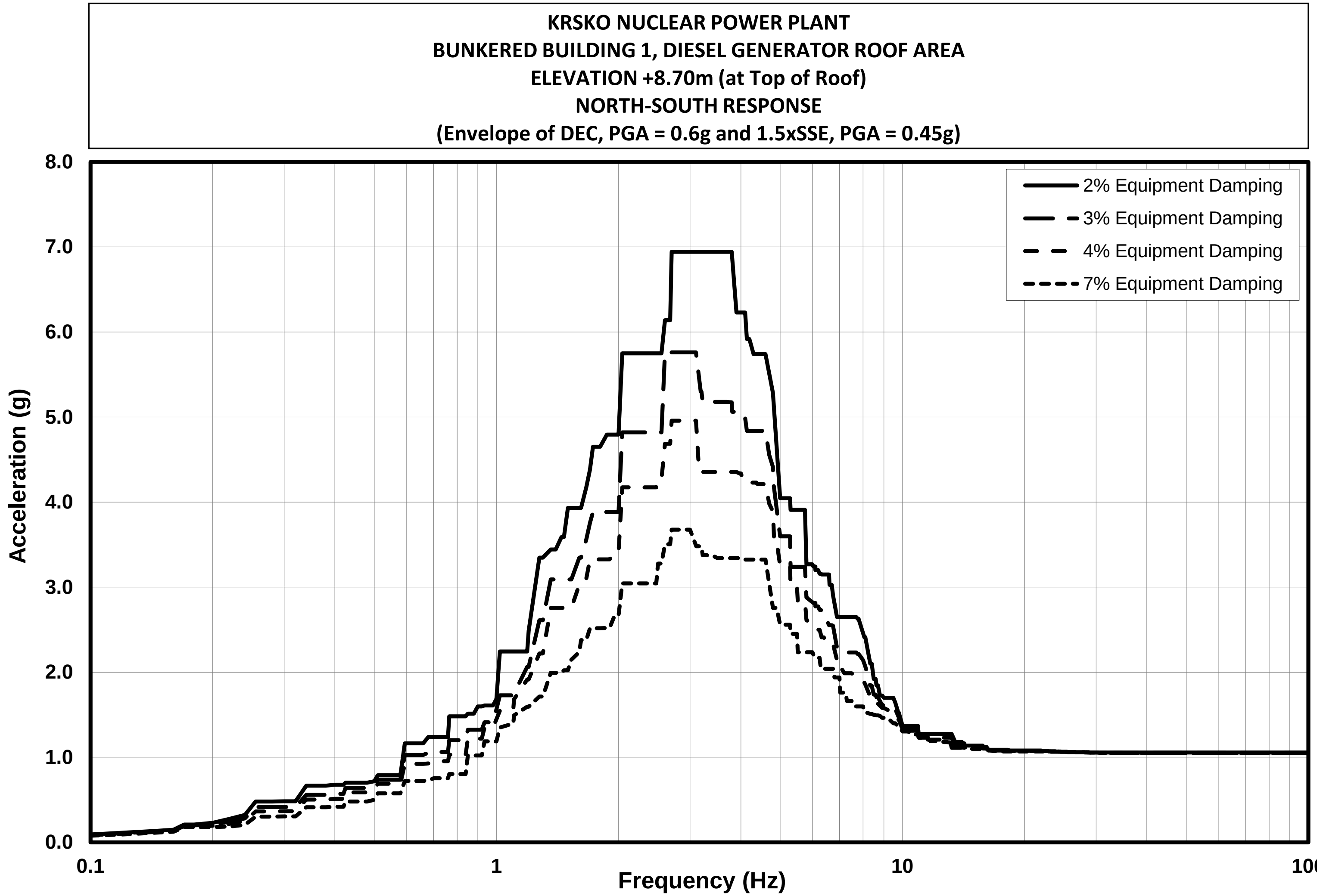
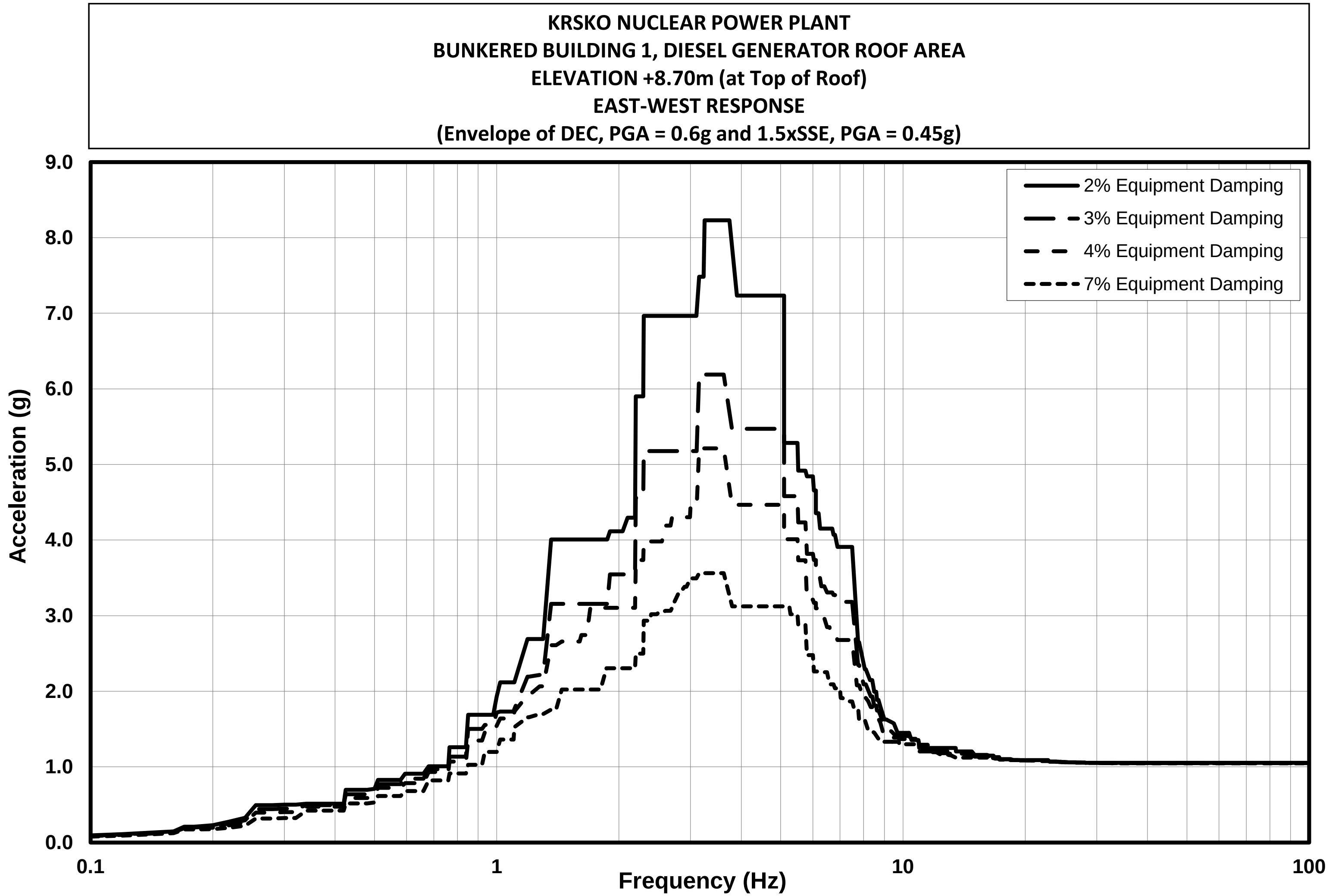
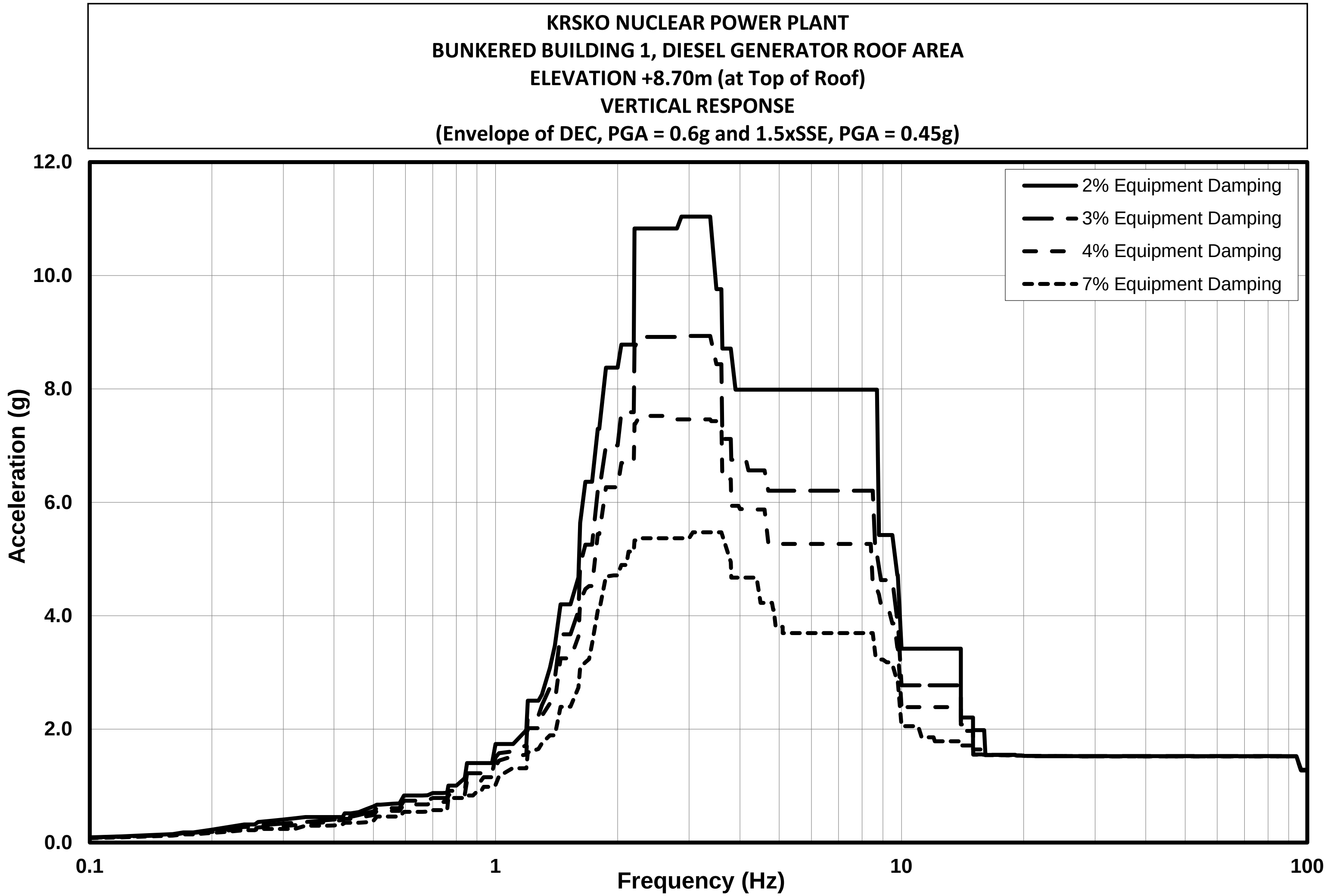

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR SLAB AREA
ELEVATION +0.30m (at Top of Ground Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C99


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR ROOF AREA
ELEVATION +8.70m (at Top of Roof)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)



KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR ROOF AREA
ELEVATION +8.70m (at Top of Roof)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, DIESEL GENERATOR ROOF AREA
ELEVATION +8.70m (at Top of Roof)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

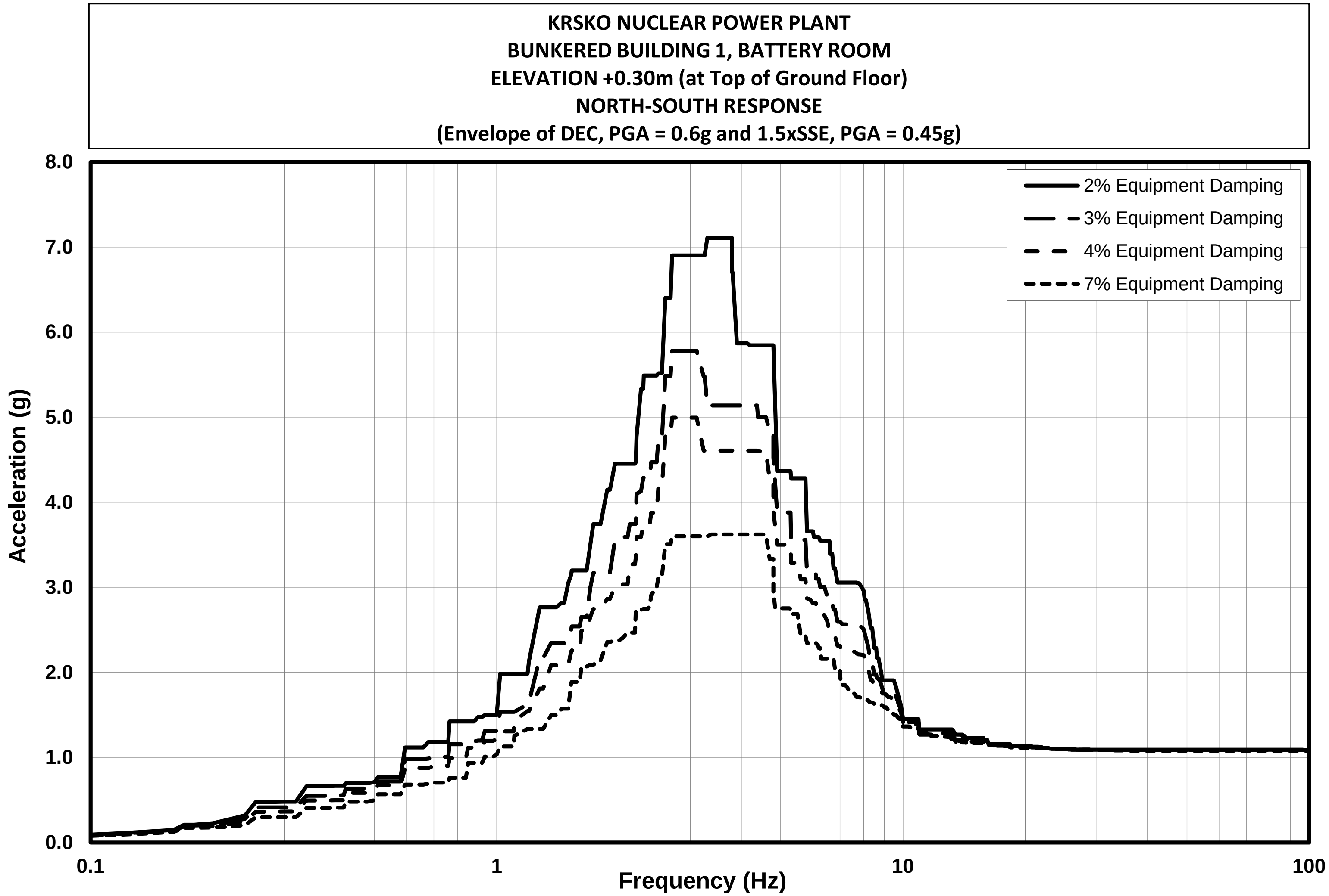
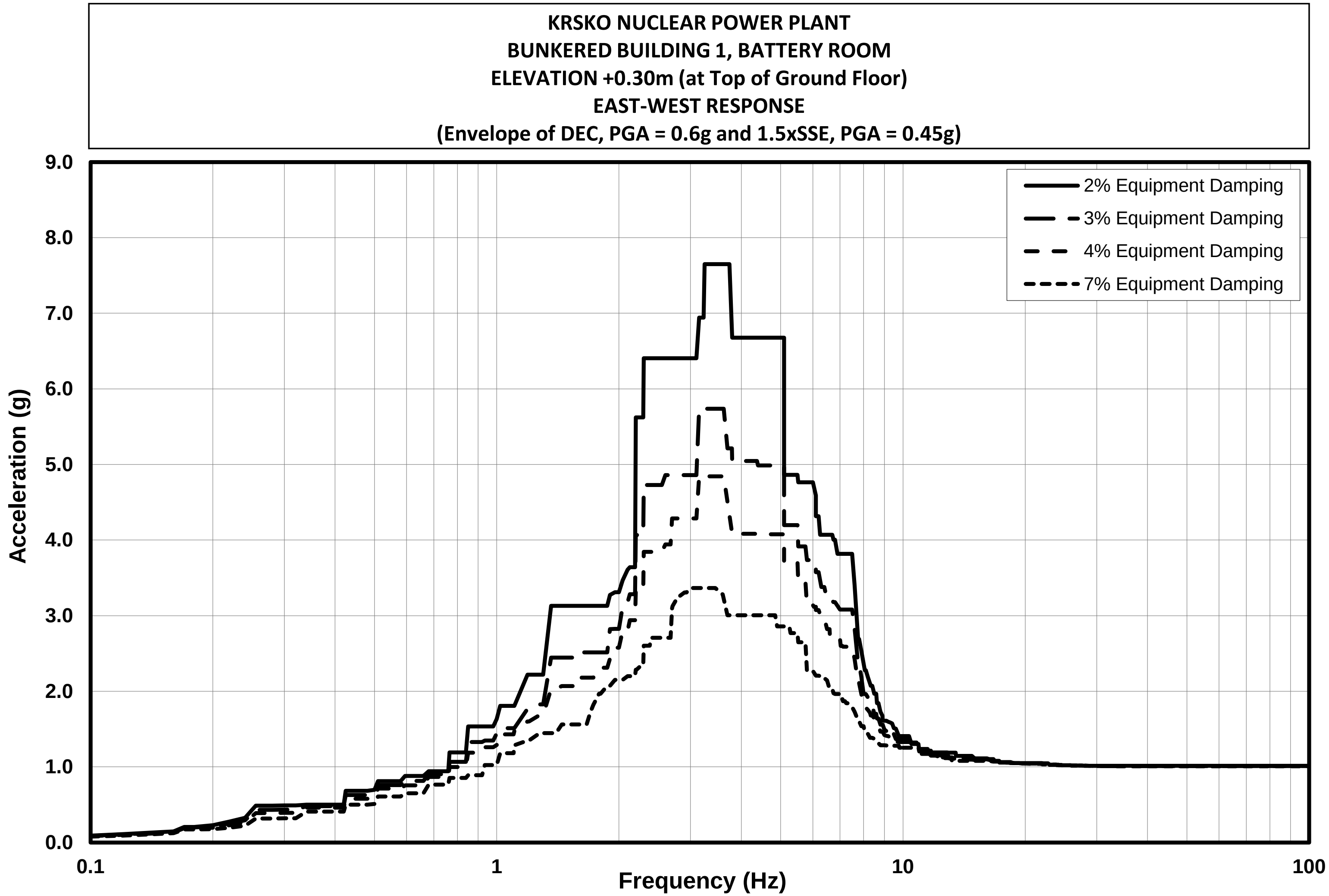

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY ROOM
ELEVATION +0.30m (at Top of Ground Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C103


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY ROOM
ELEVATION +0.30m (at Top of Ground Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

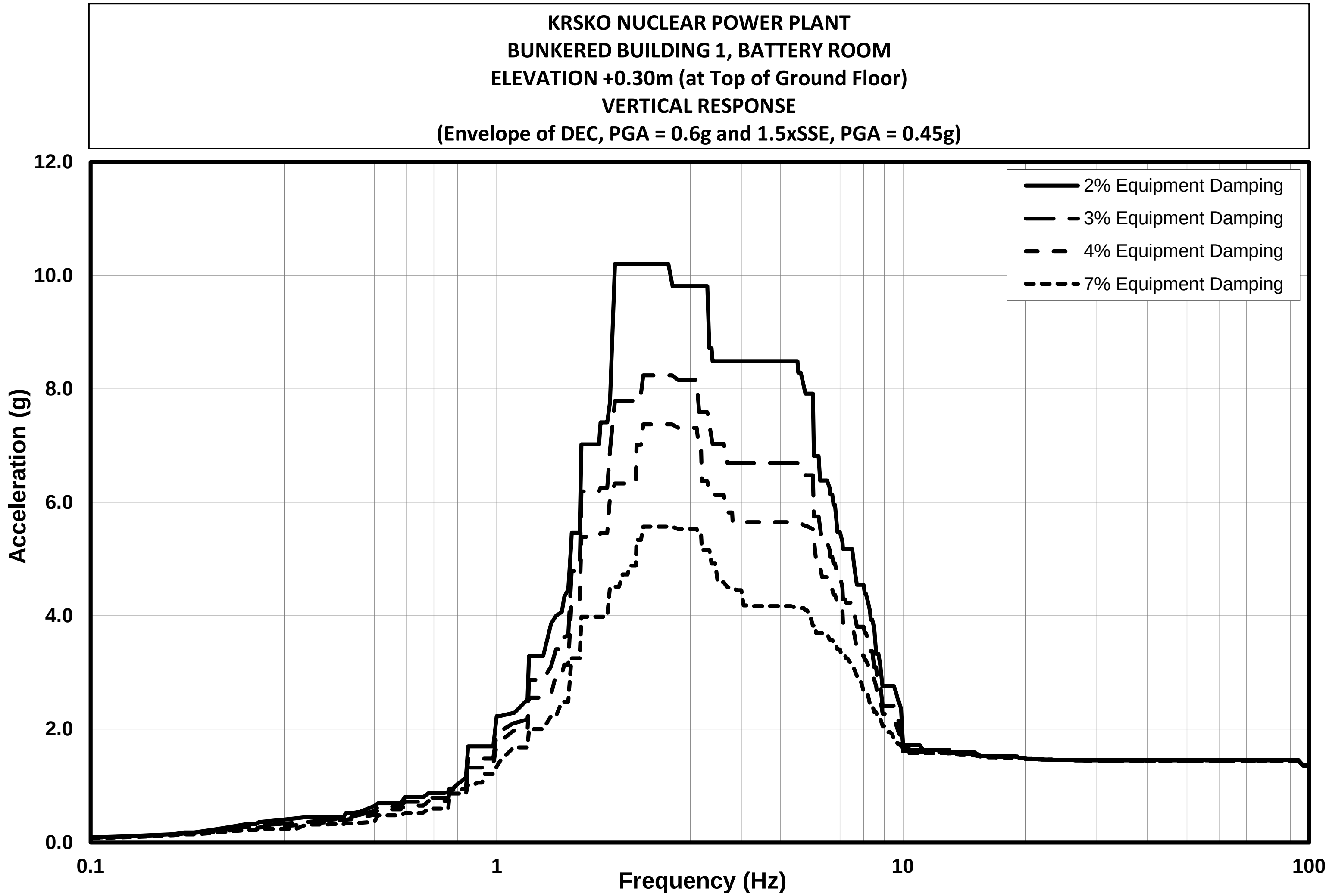
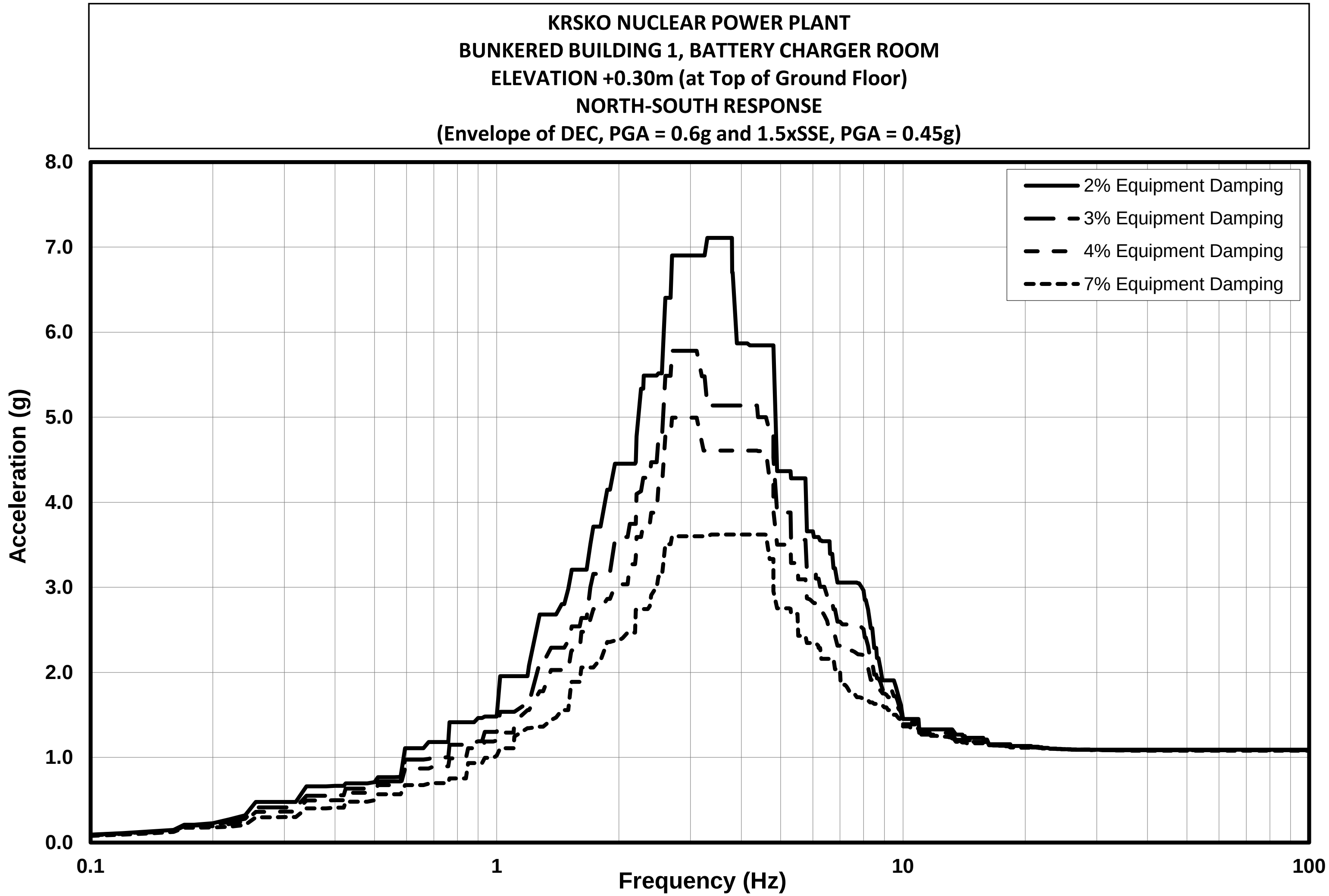
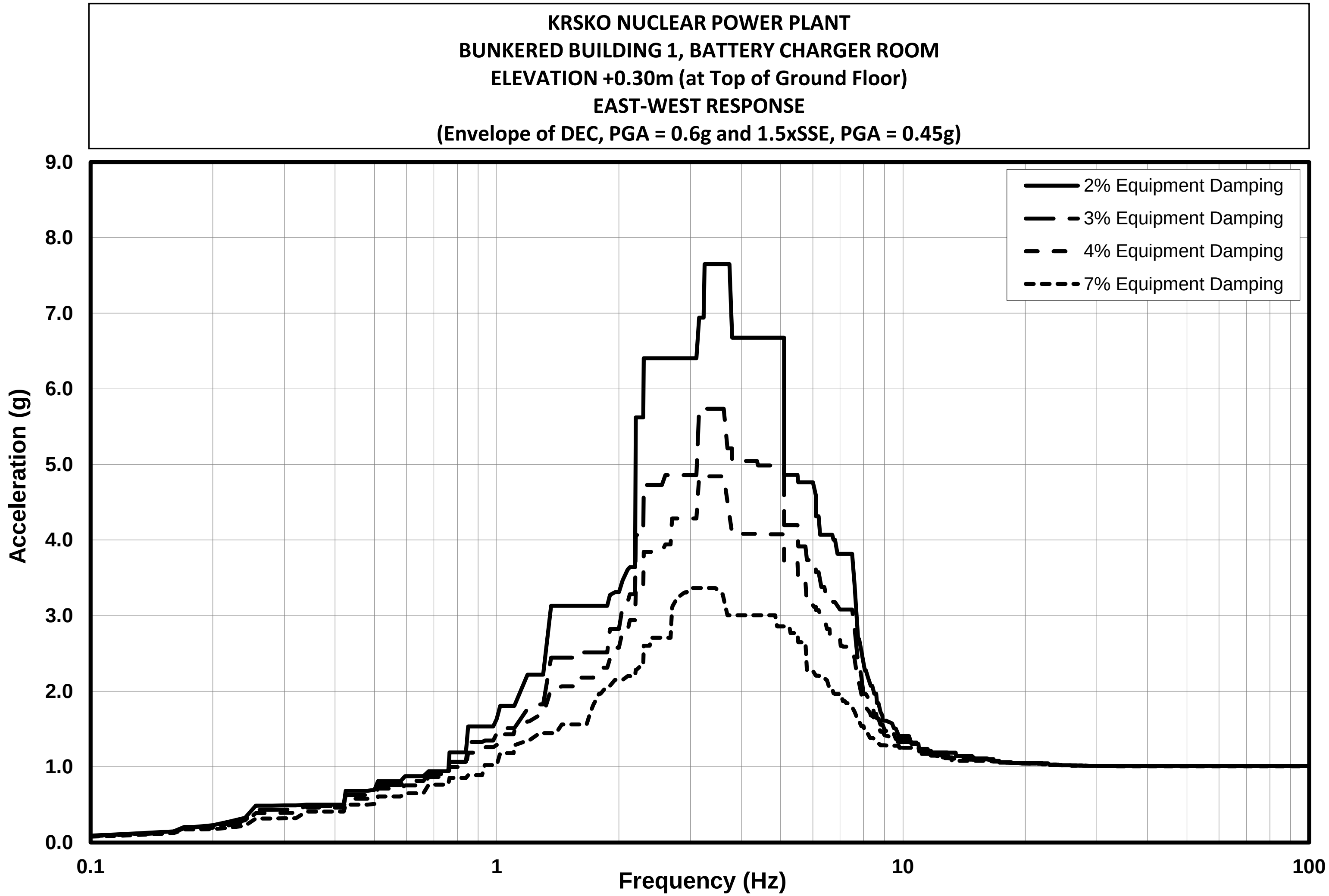

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY ROOM
ELEVATION +0.30m (at Top of Ground Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C105


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY CHARGER ROOM
ELEVATION +0.30m (at Top of Ground Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY CHARGER ROOM
ELEVATION +0.30m (at Top of Ground Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

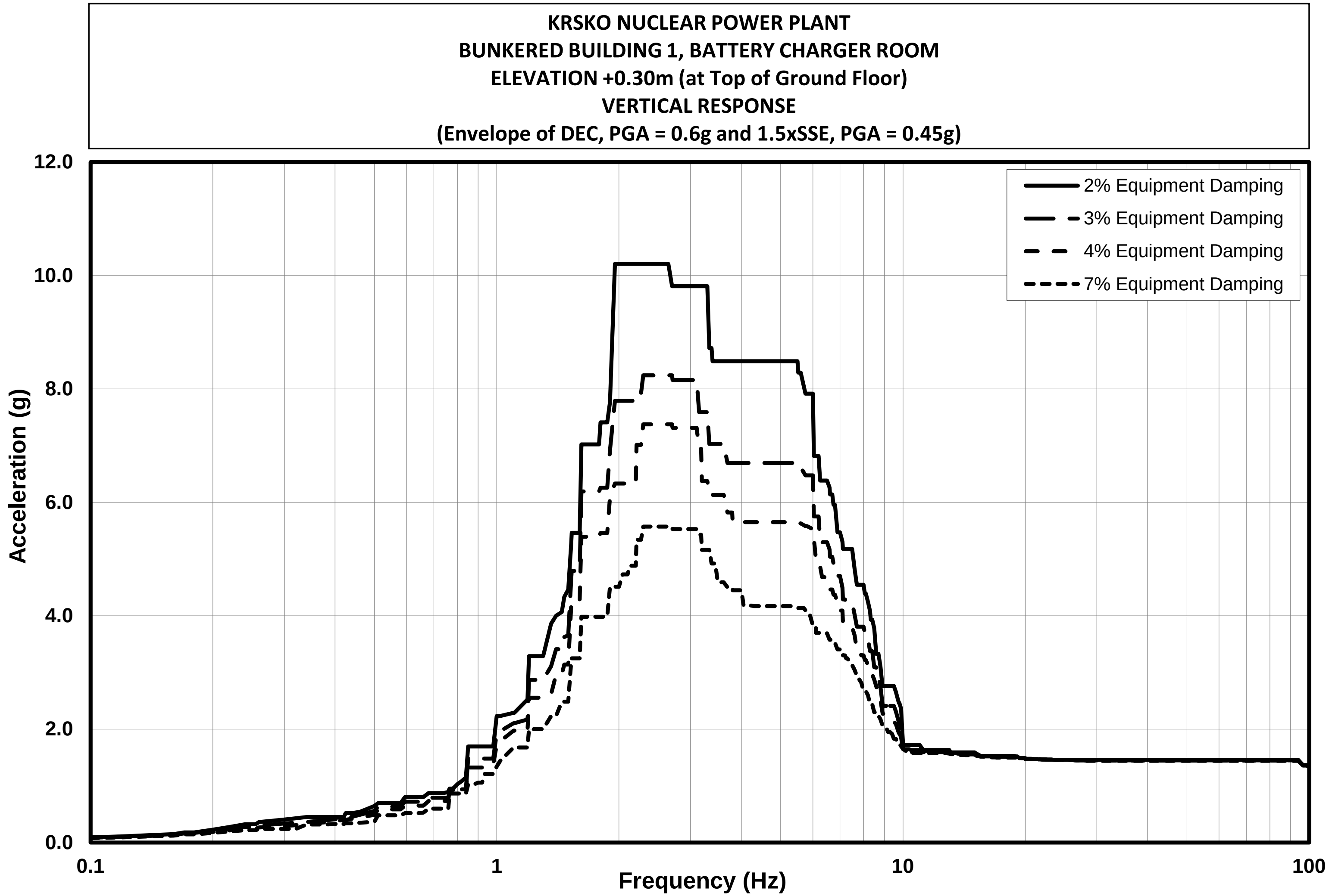
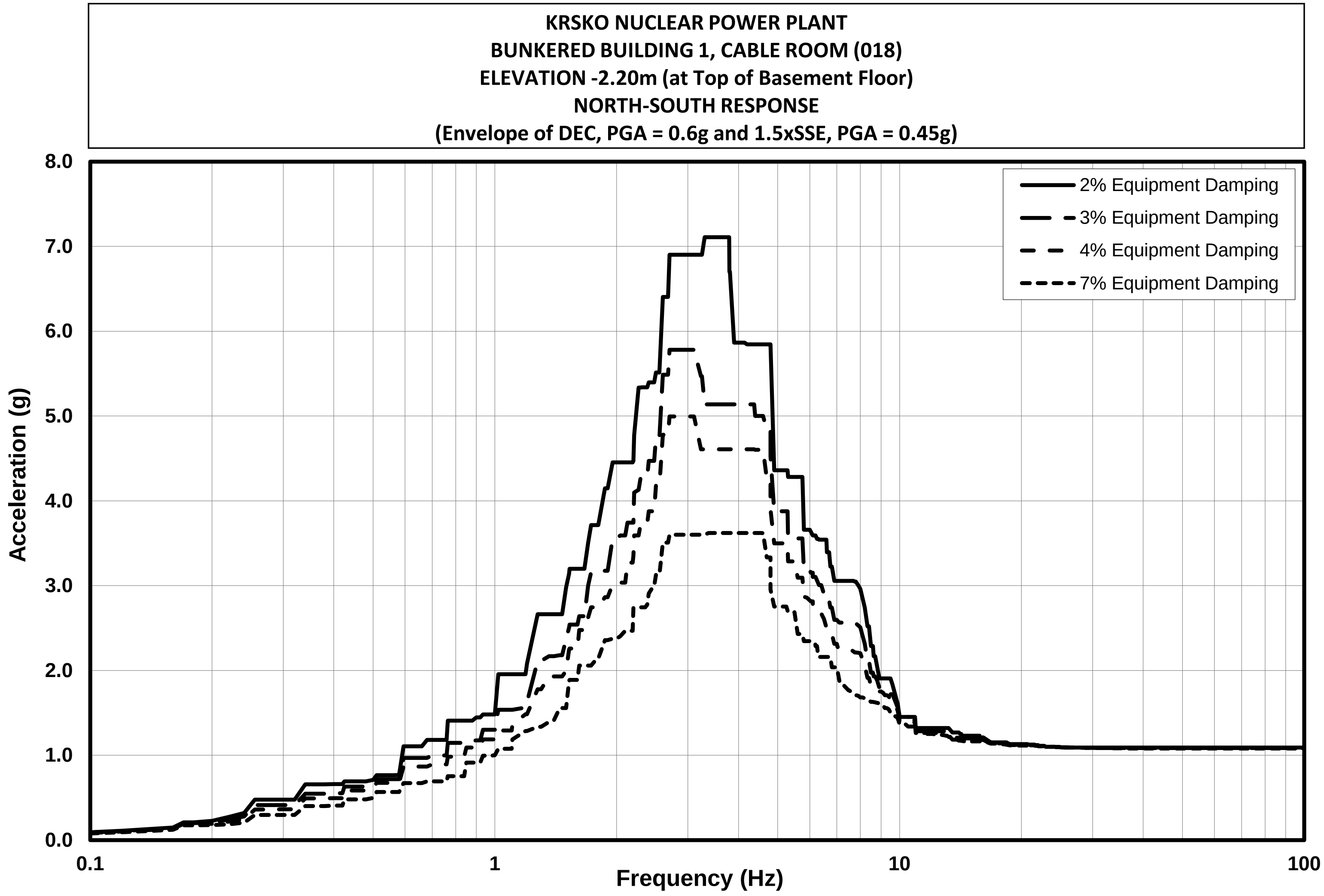
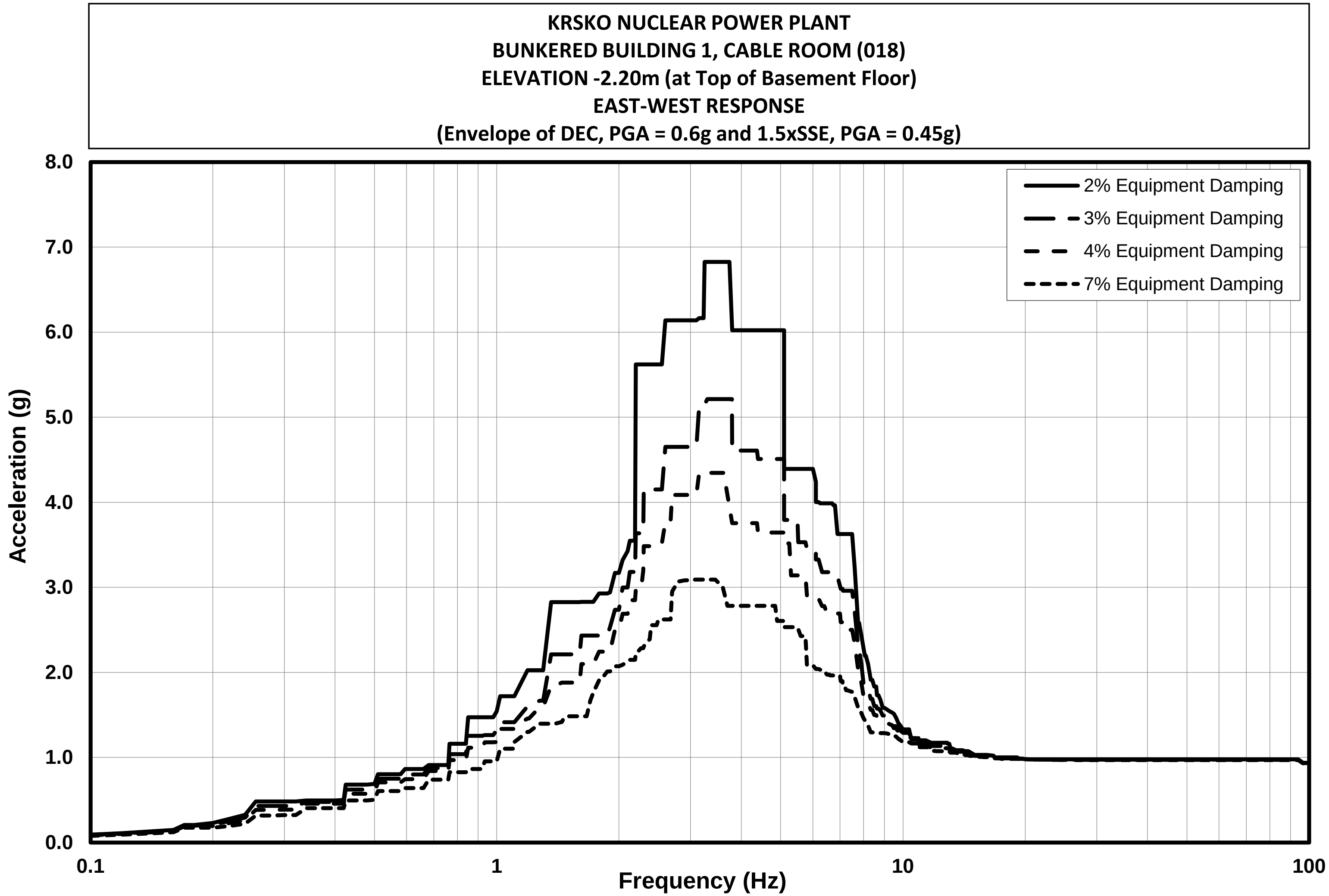
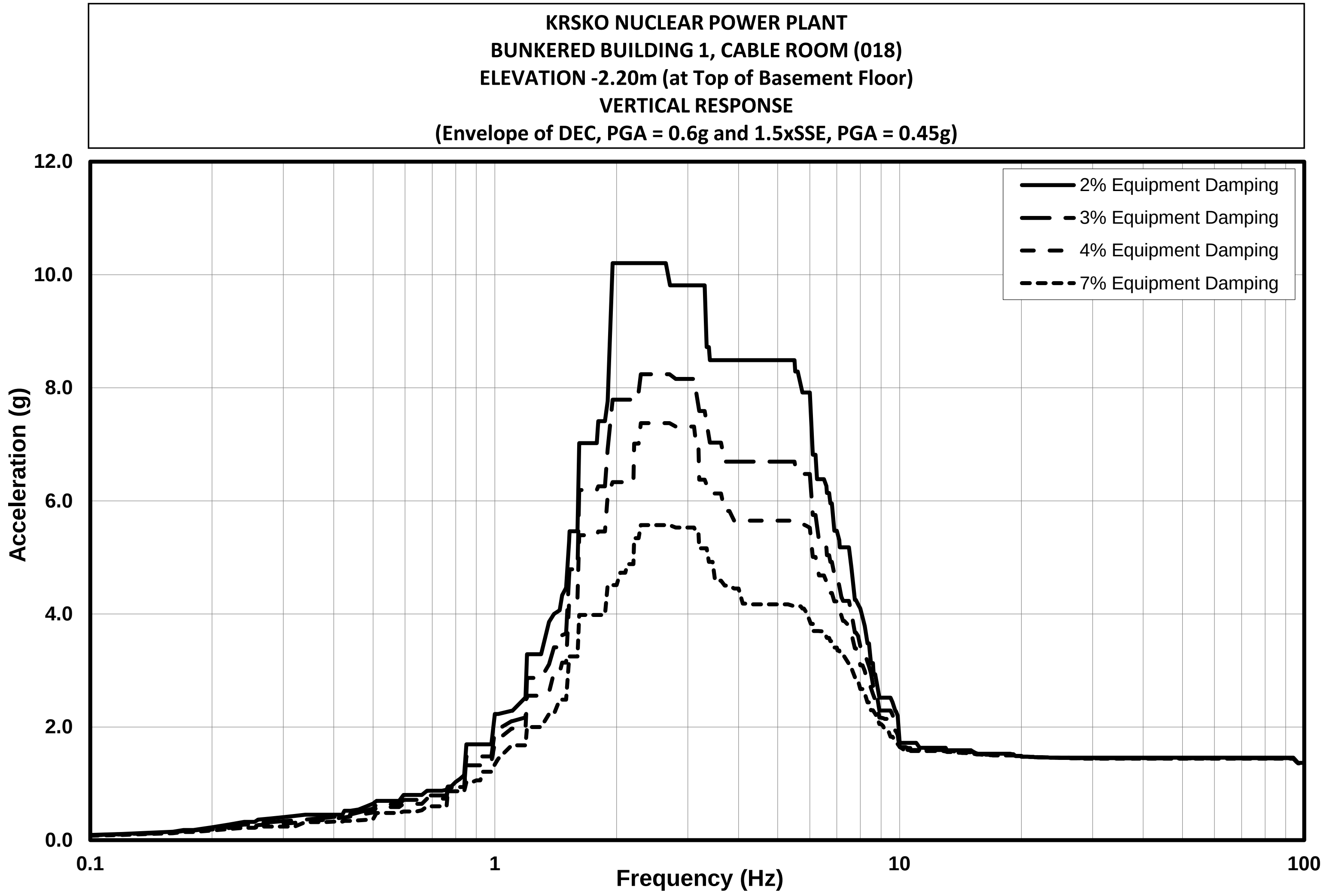
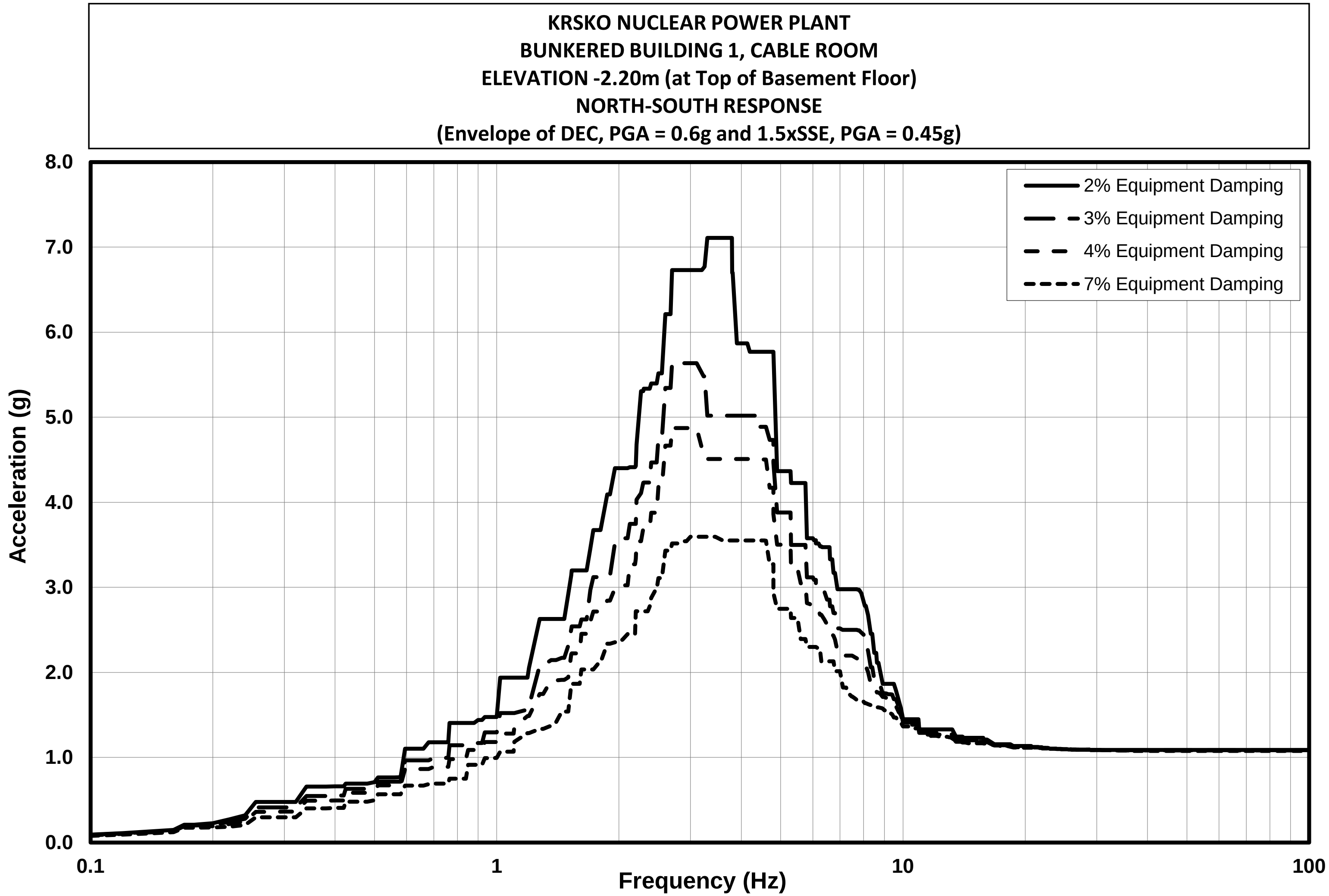

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, BATTERY CHARGER ROOM
ELEVATION +0.30m (at Top of Ground Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
0.1
1
10
100

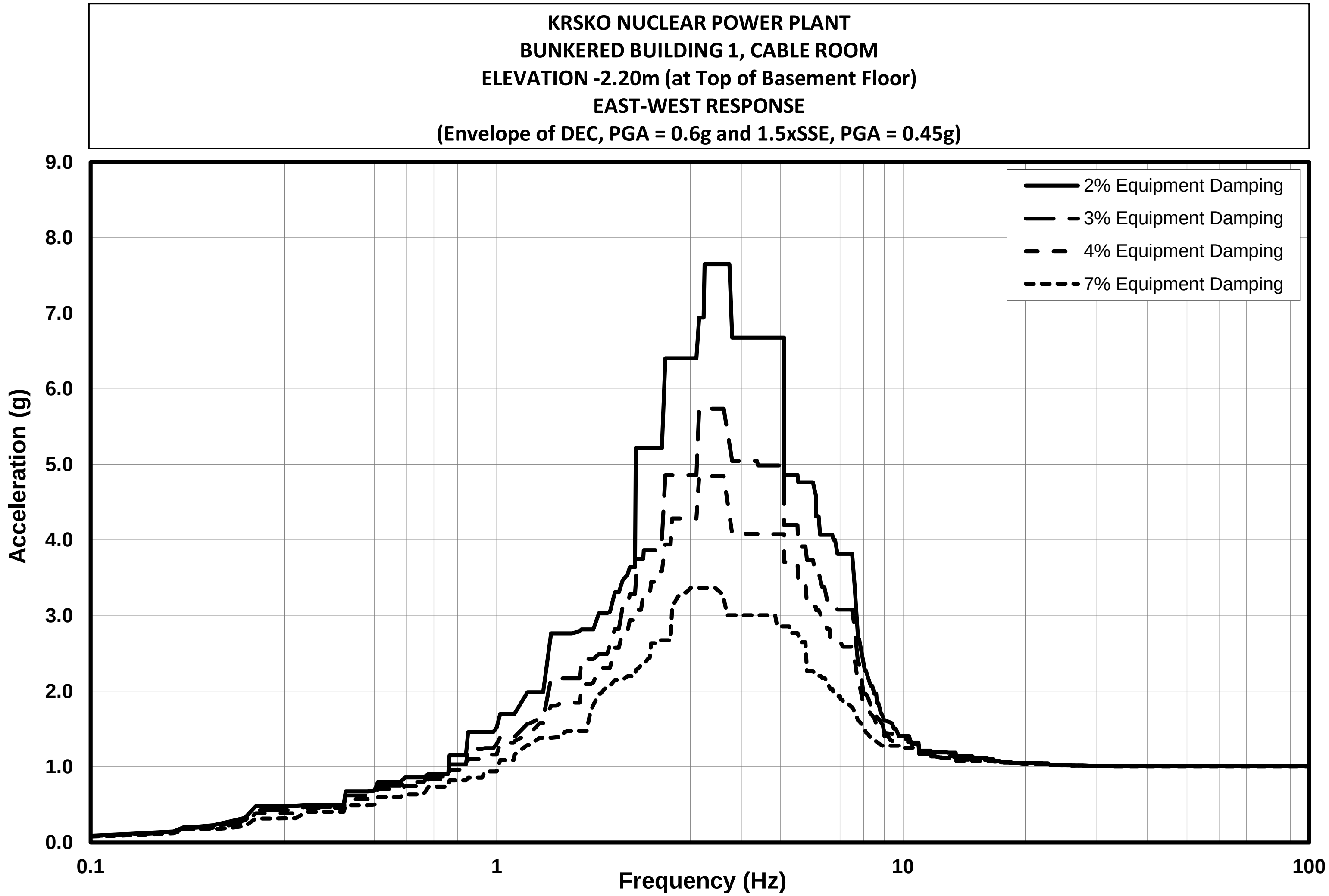
Figure C108


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM (018)
ELEVATION -2.20m (at Top of Basement Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM (018)
ELEVATION -2.20m (at Top of Basement Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM (018)
ELEVATION -2.20m (at Top of Basement Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM
ELEVATION -2.20m (at Top of Basement Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM
ELEVATION -2.20m (at Top of Basement Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

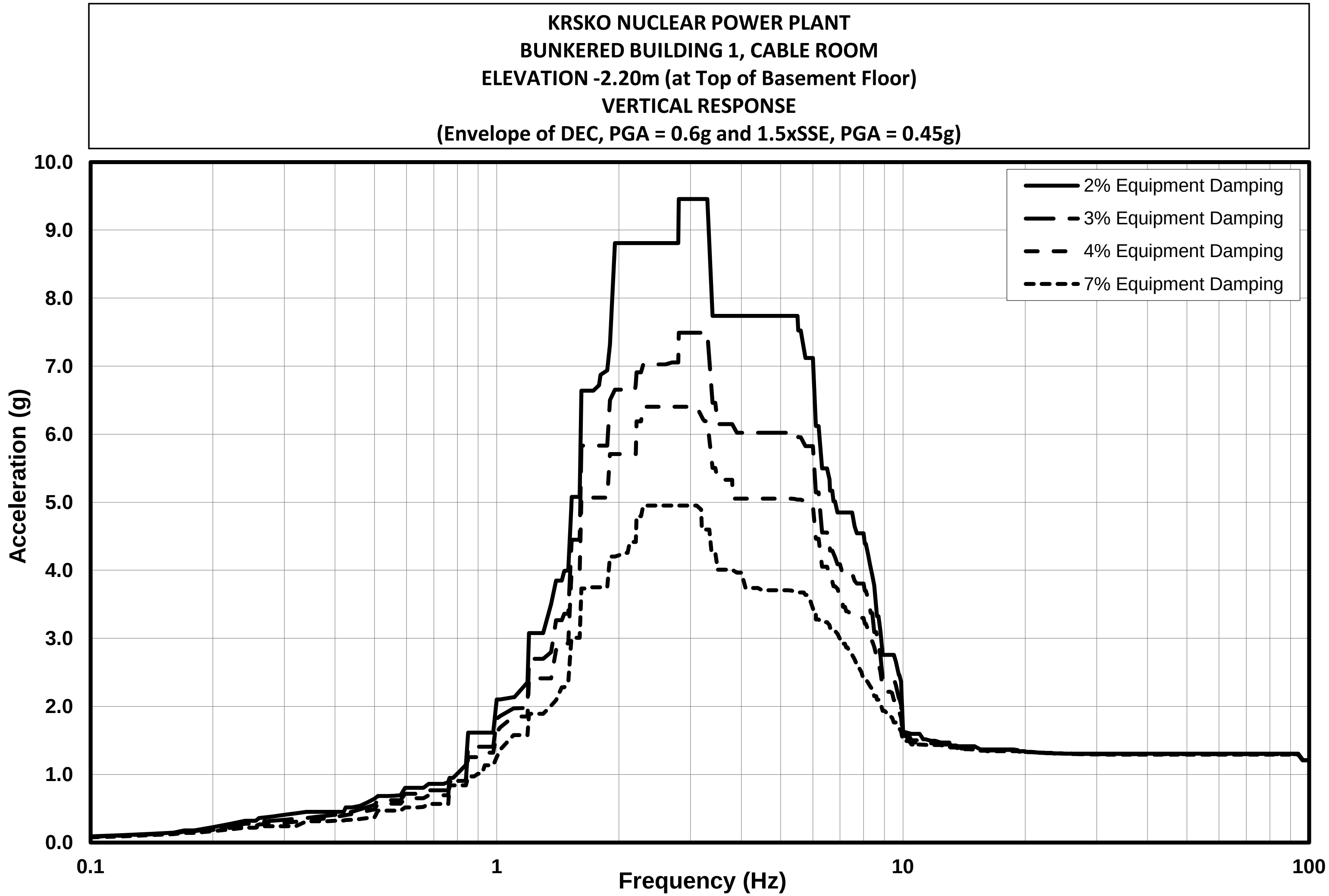
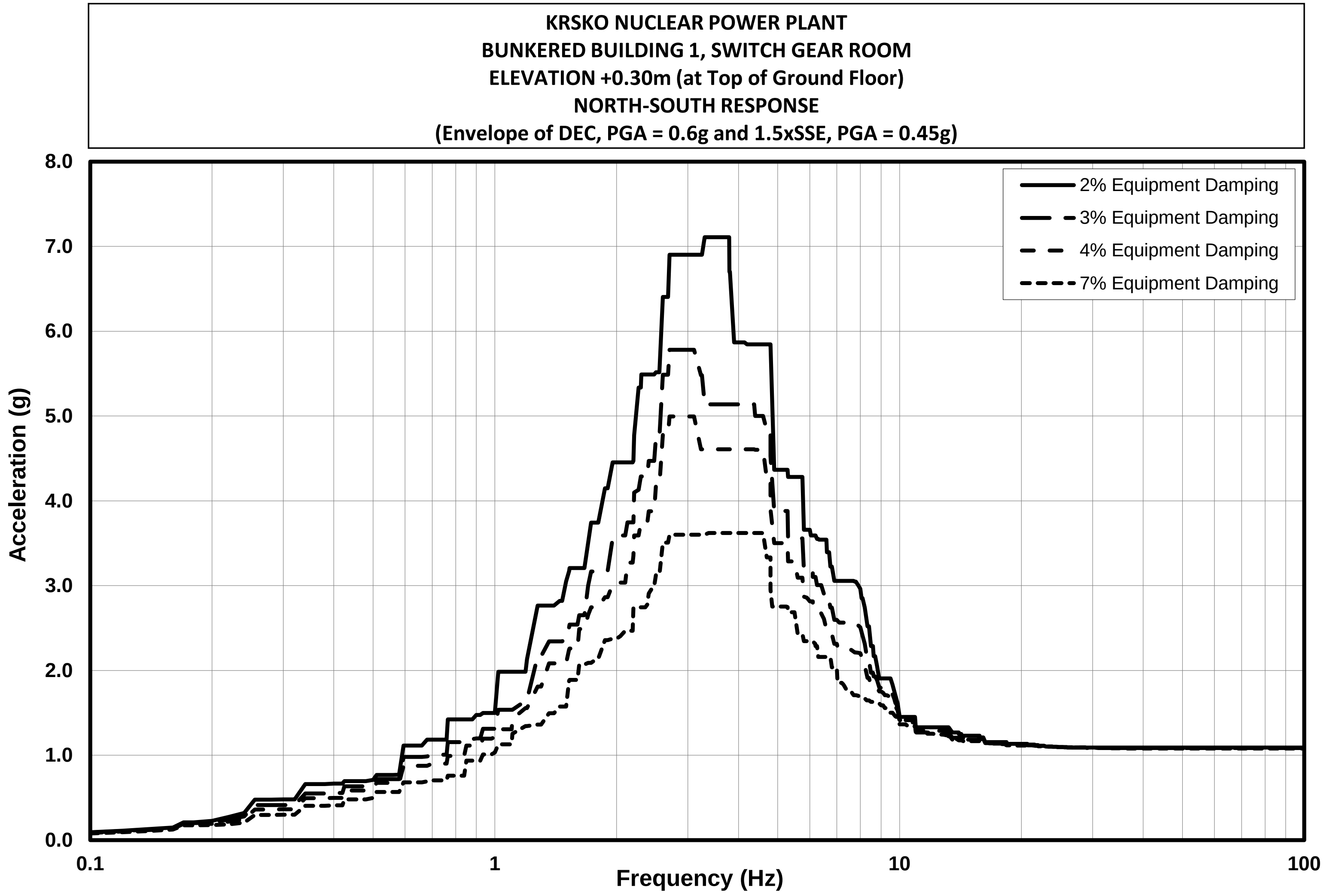

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, CABLE ROOM
ELEVATION -2.20m (at Top of Basement Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C114


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, SWITCH GEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

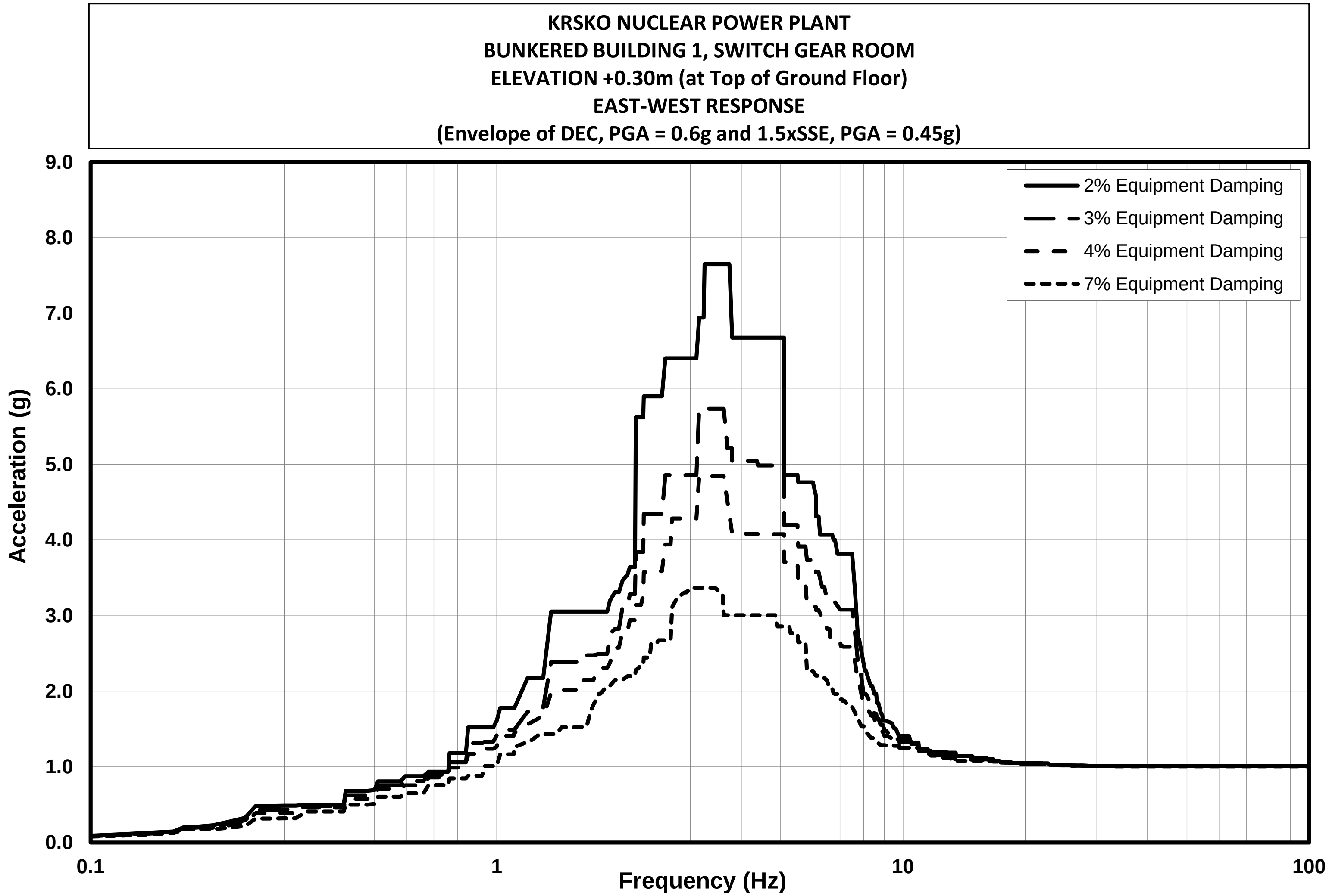
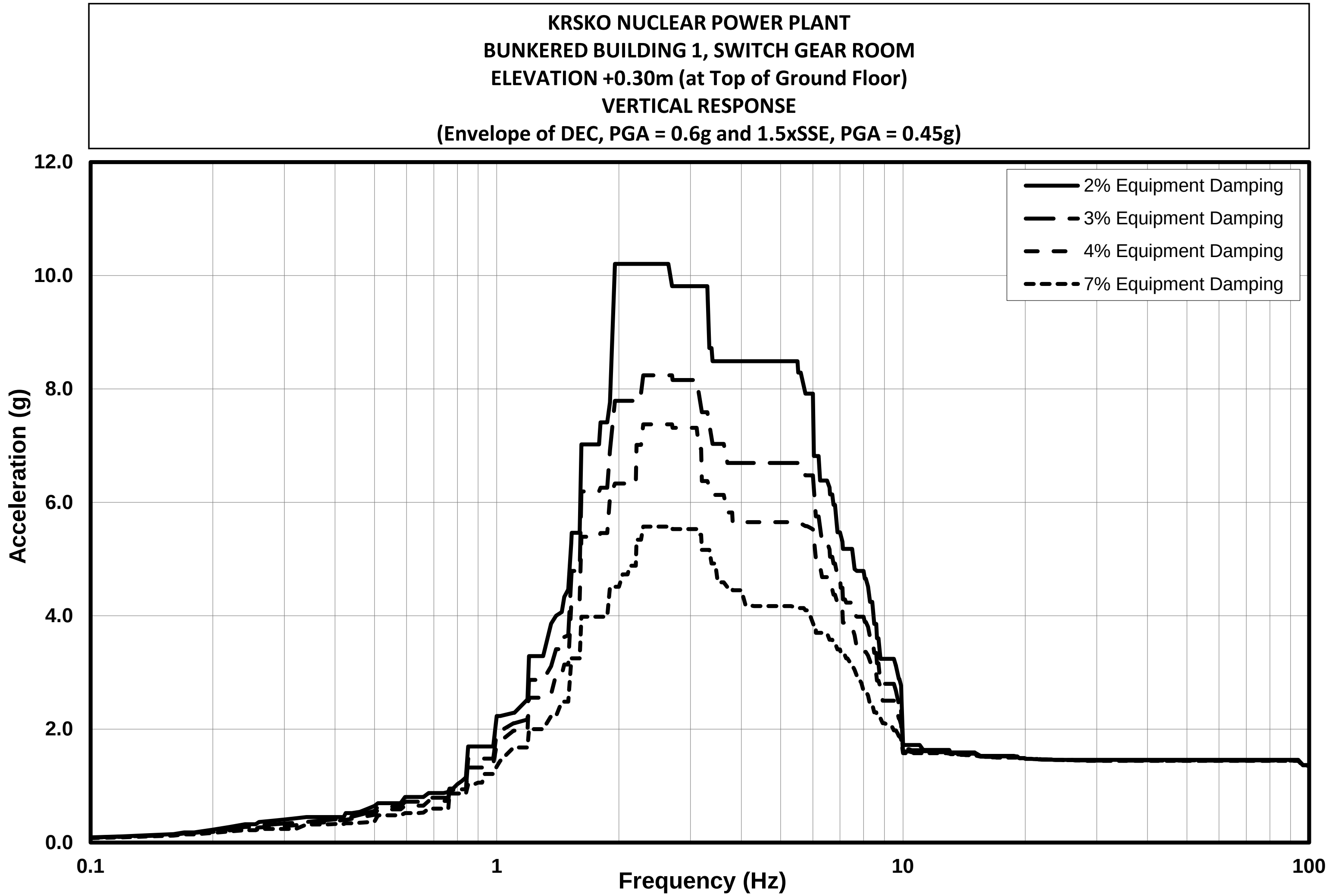
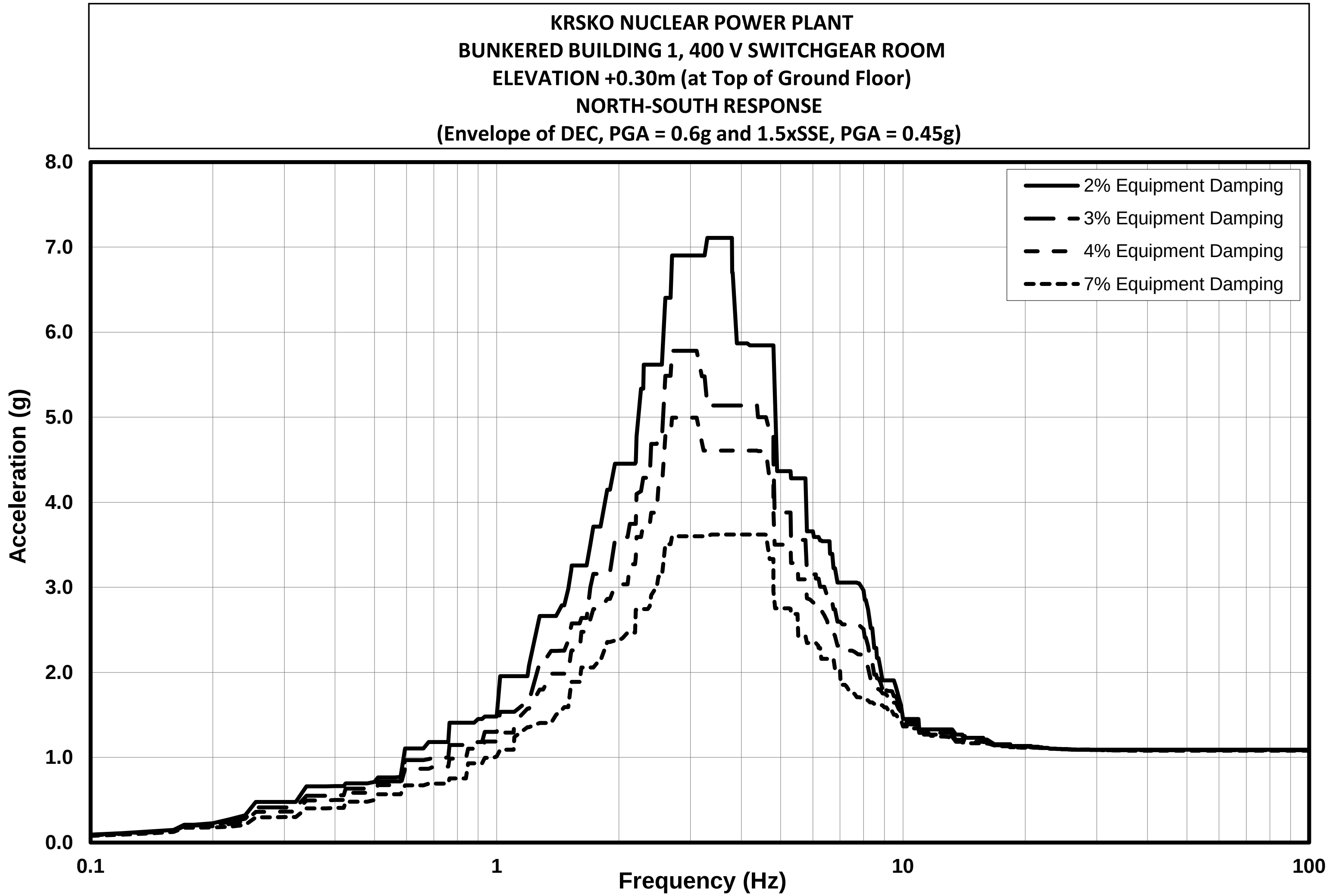

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, SWITCH GEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C116


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, SWITCH GEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, 400 V SWITCHGEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

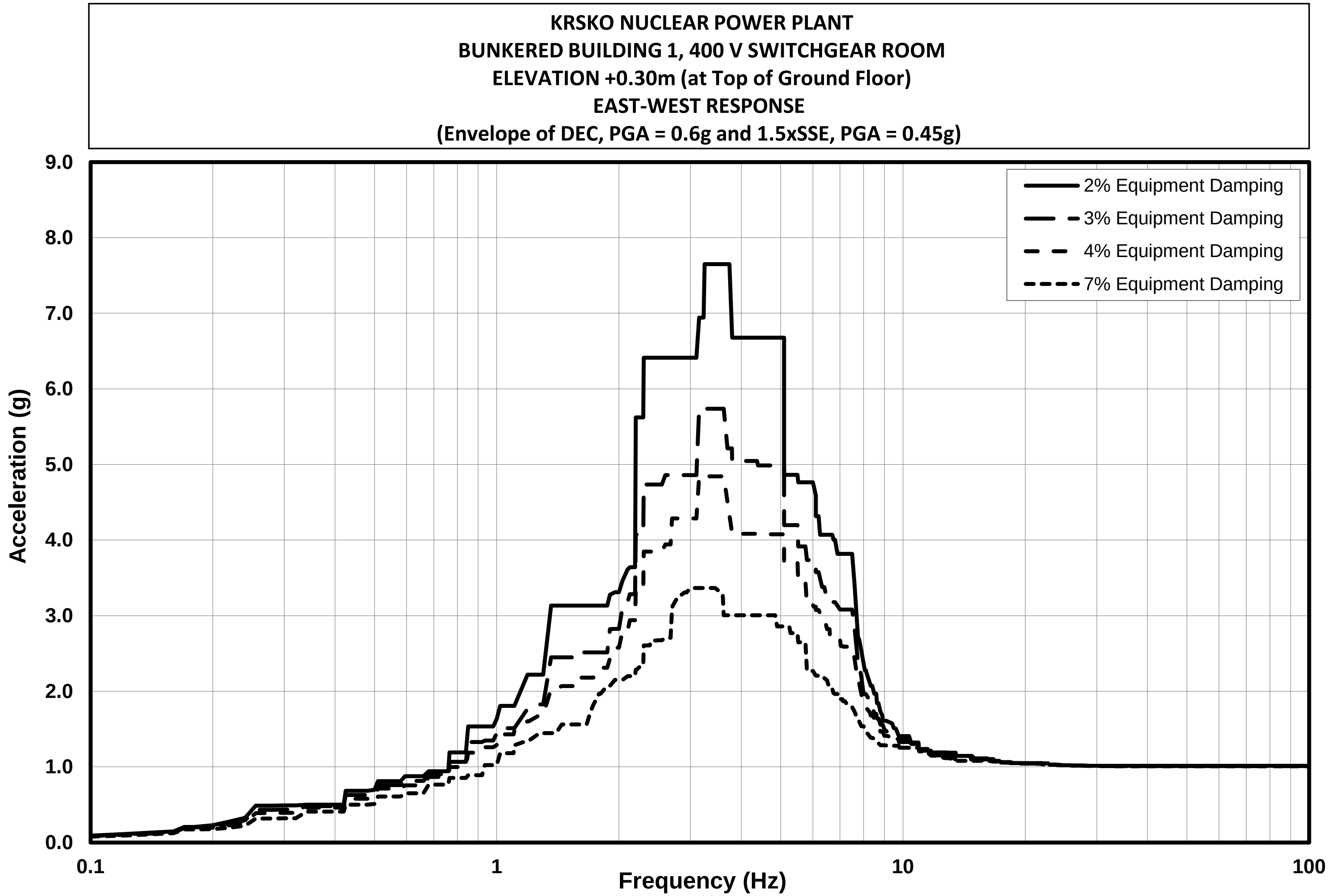
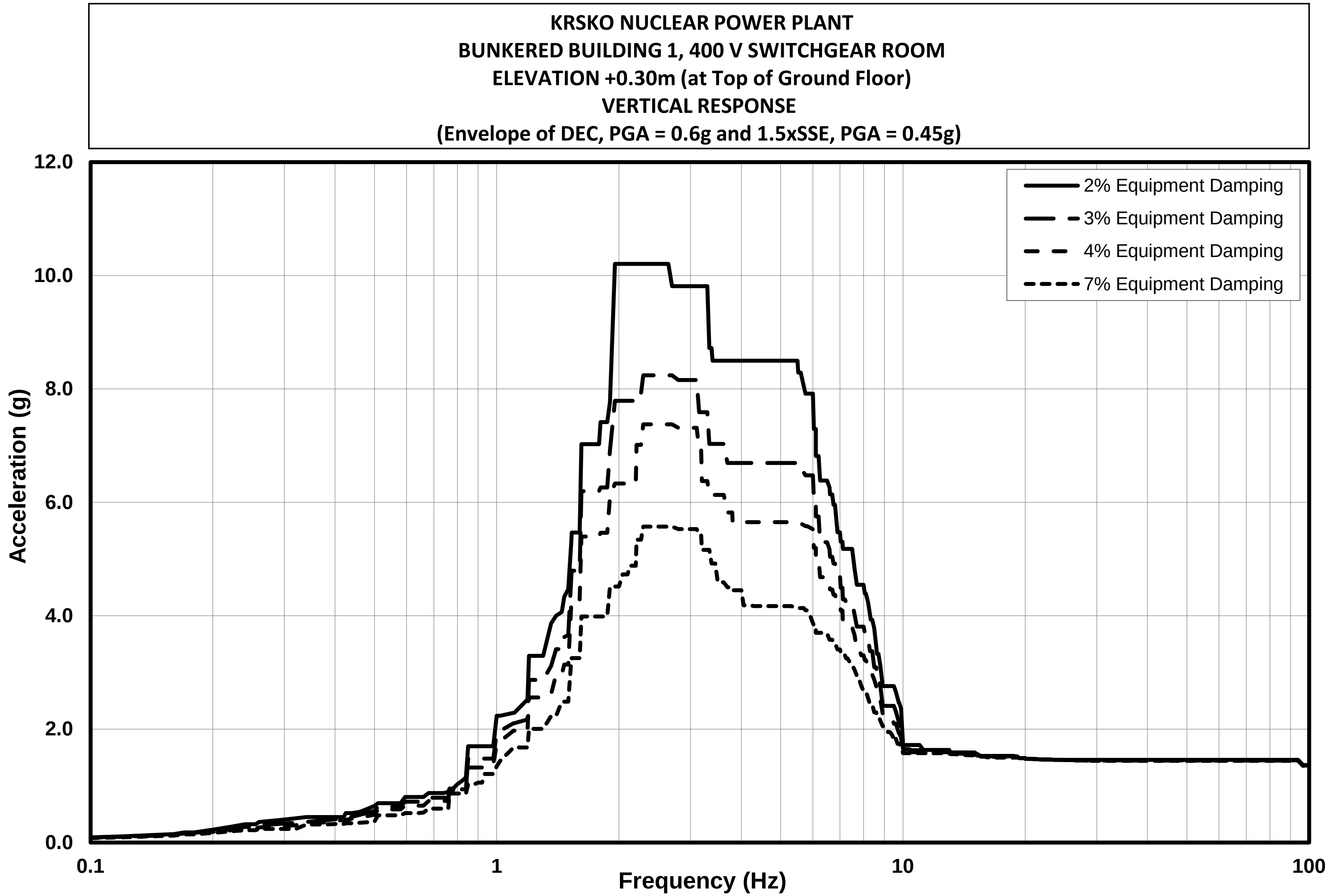

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, 400 V SWITCHGEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C119


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, 400 V SWITCHGEAR ROOM
ELEVATION +0.30m (at Top of Ground Floor)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

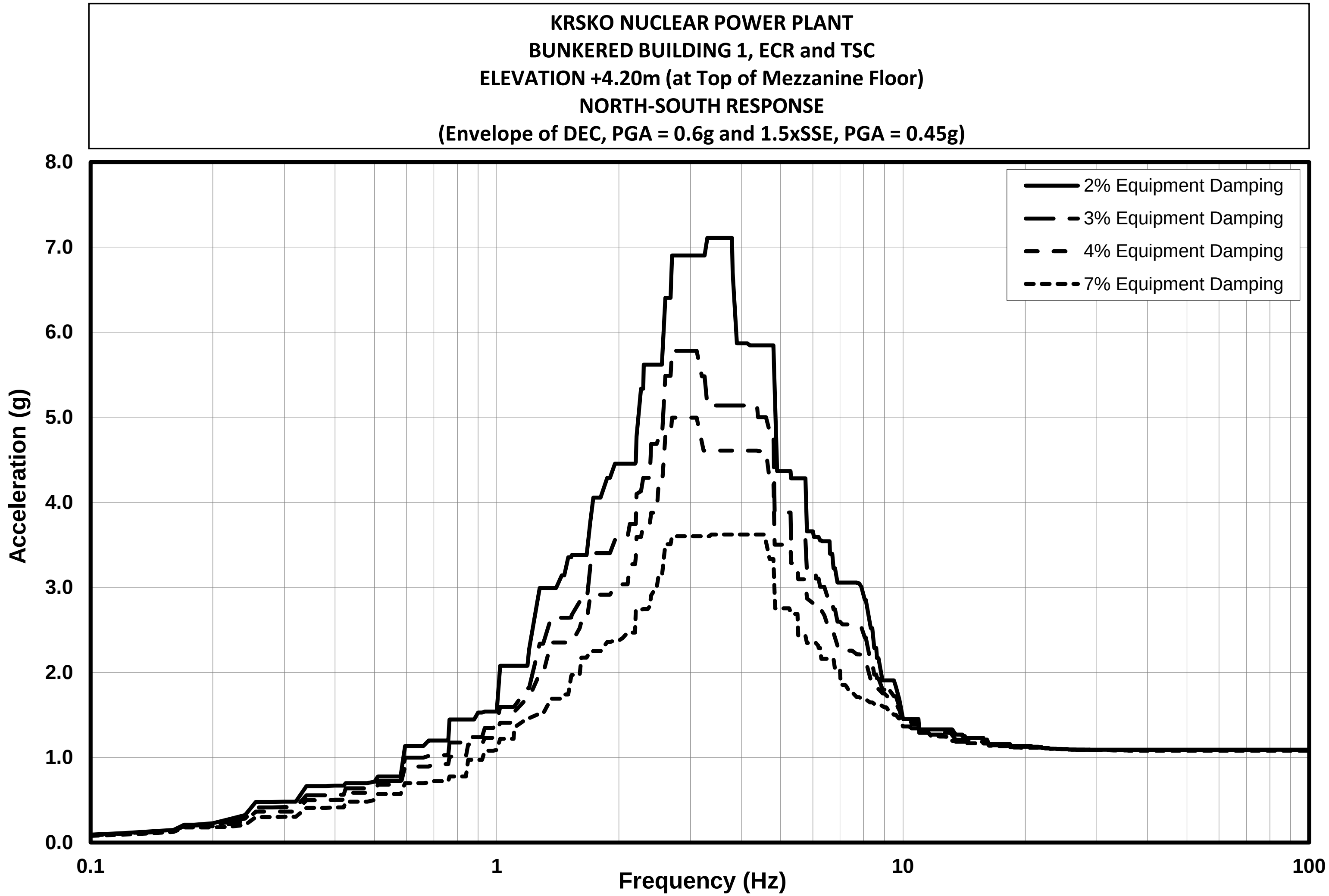
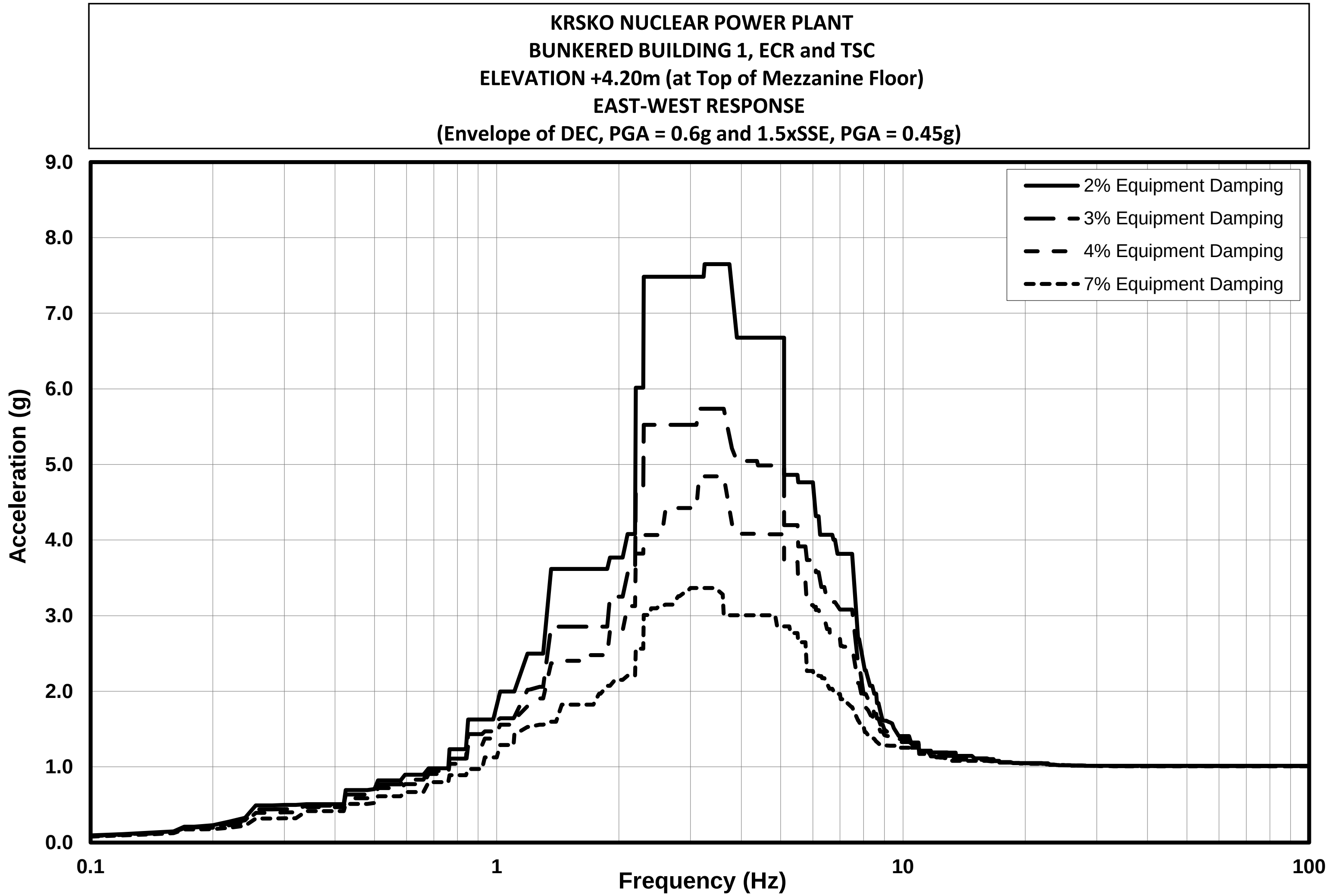
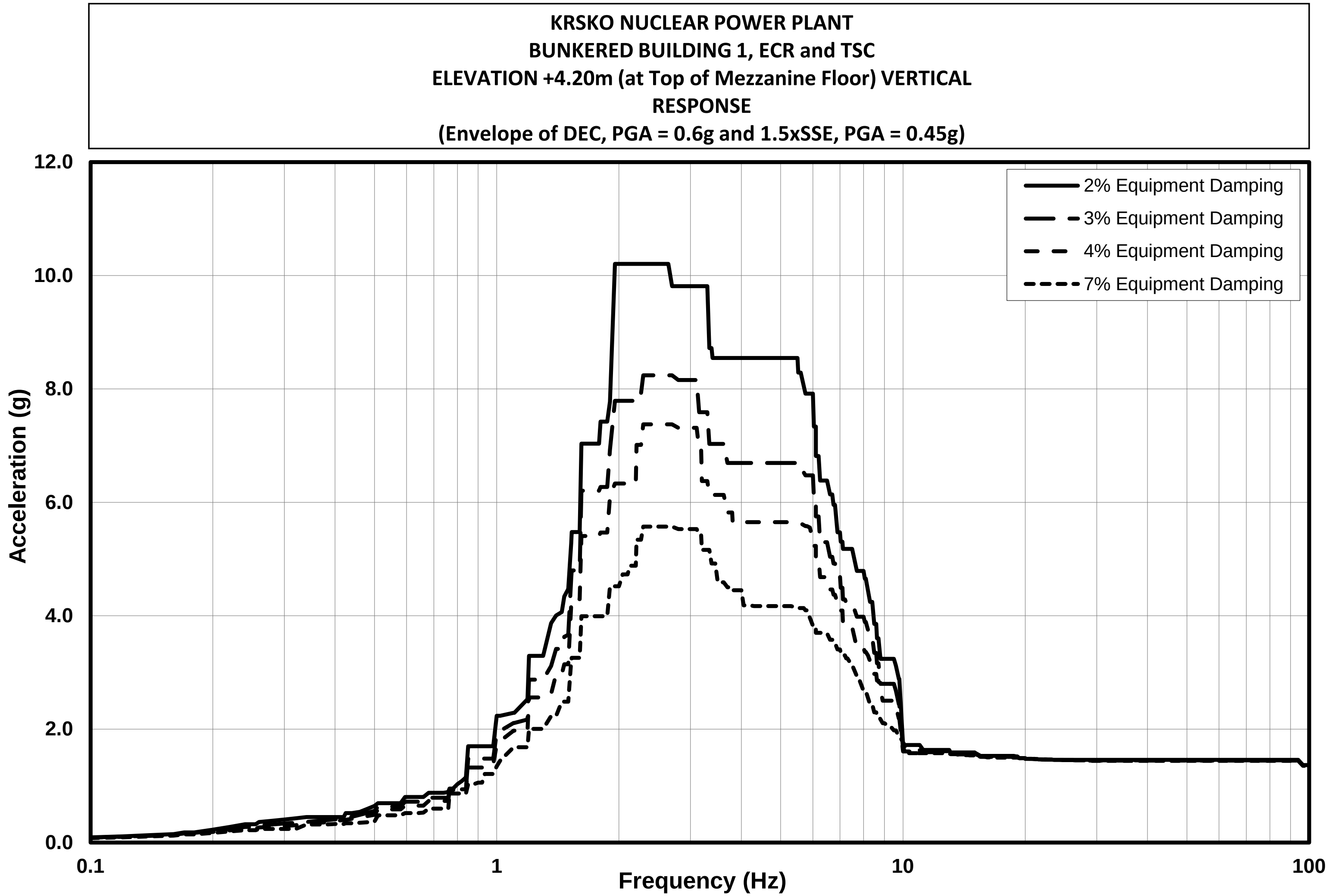

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ECR and TSC
ELEVATION +4.20m (at Top of Mezzanine Floor)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C121


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ECR and TSC
ELEVATION +4.20m (at Top of Mezzanine Floor)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ECR and TSC
ELEVATION +4.20m (at Top of Mezzanine Floor) VERTICAL
RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

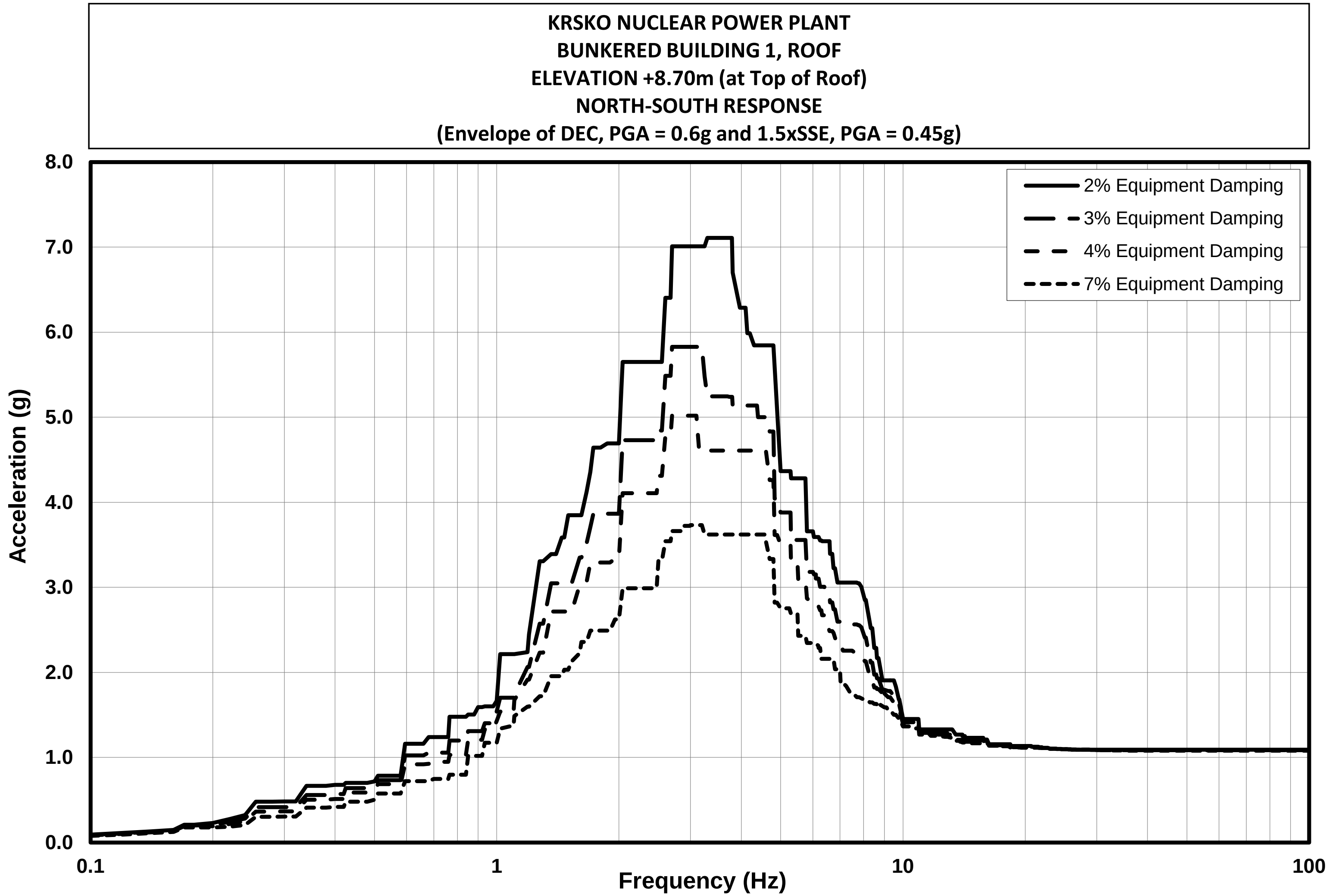
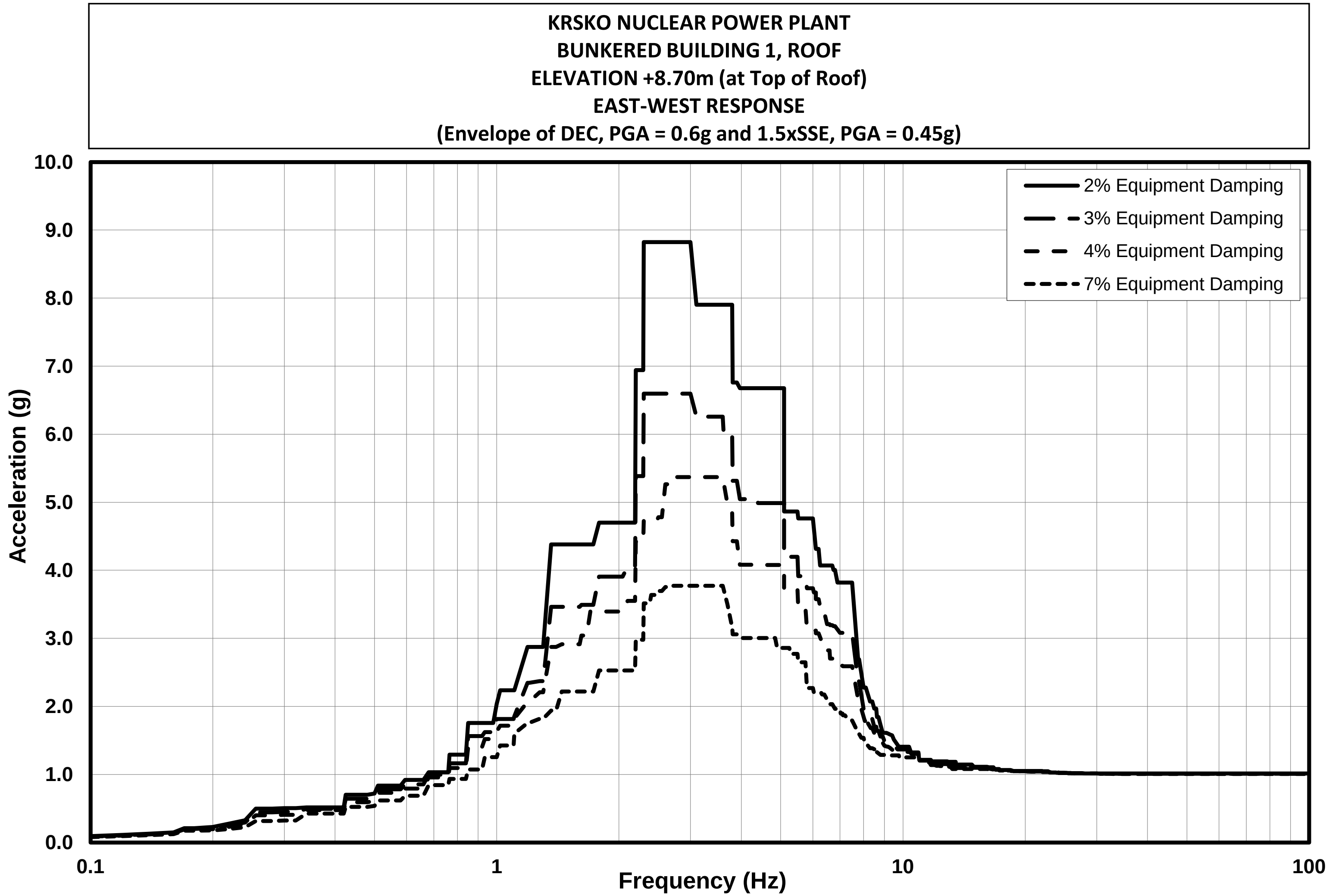

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ROOF
ELEVATION +8.70m (at Top of Roof)
NORTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure C124


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ROOF
ELEVATION +8.70m (at Top of Roof)
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

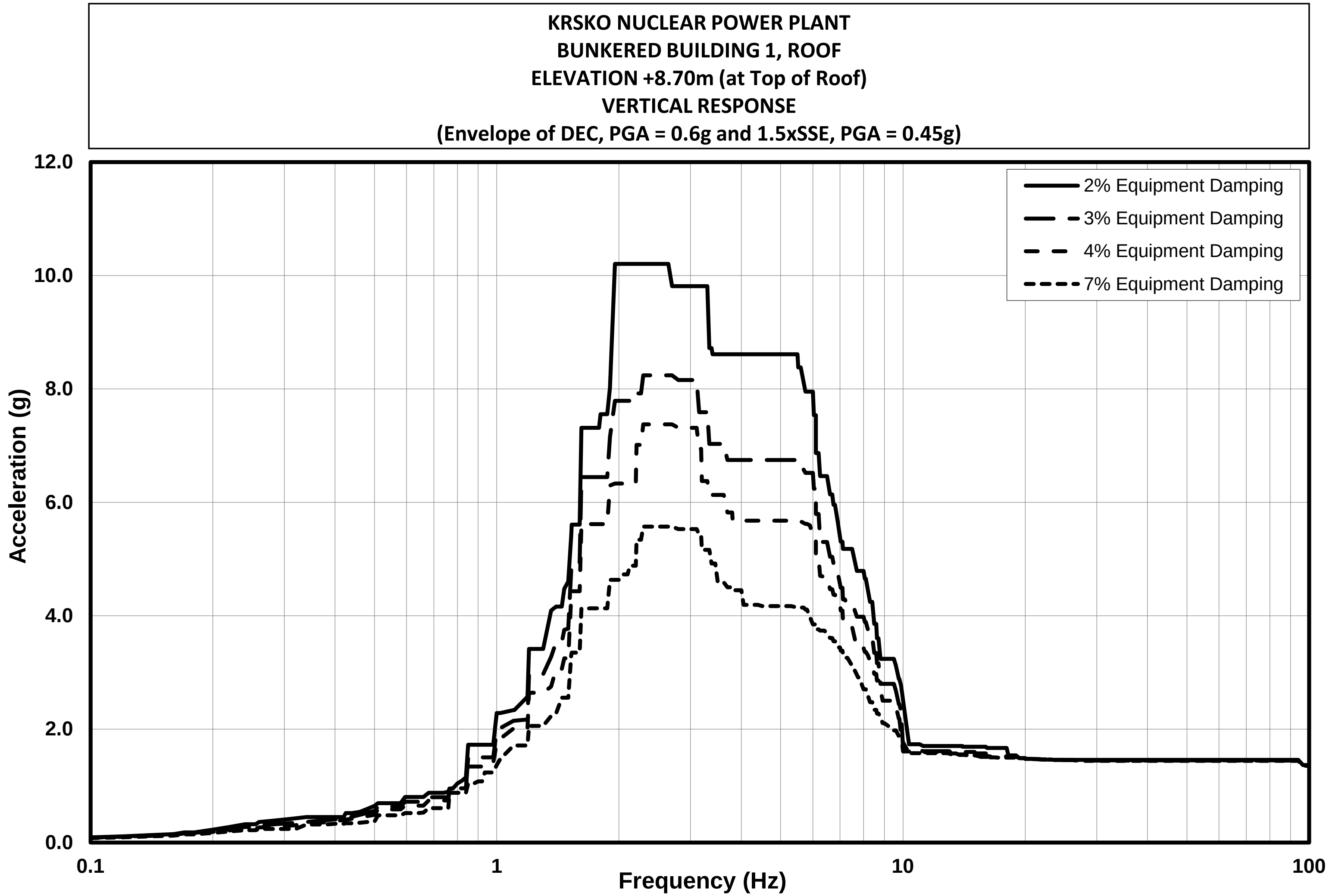
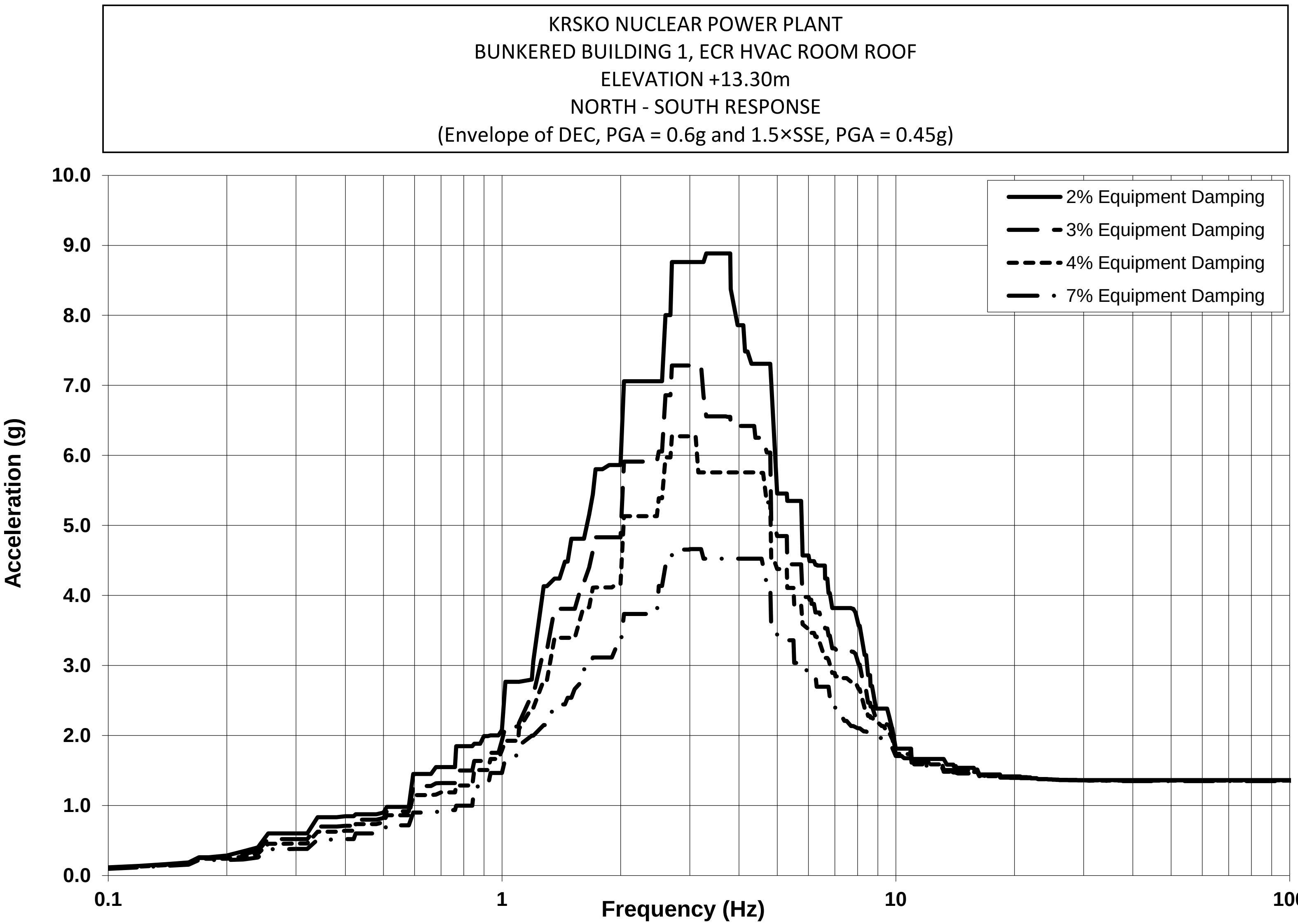

KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ROOF
ELEVATION +8.70m (at Top of Roof)
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5xSSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C126


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ECR HVAC ROOM ROOF
ELEVATION +13.30m
NORTH - SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5×SSE, PGA = 0.45g)
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

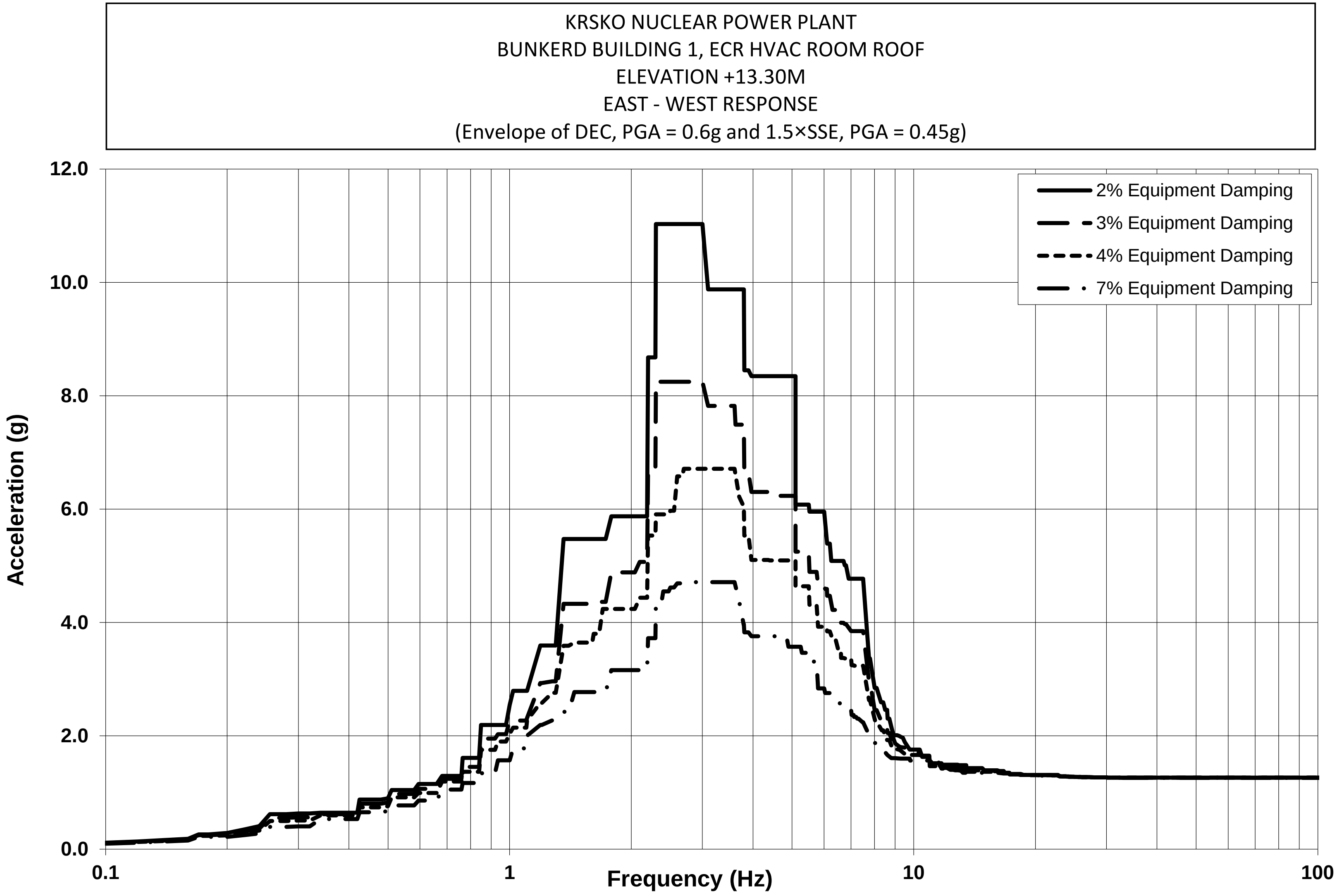
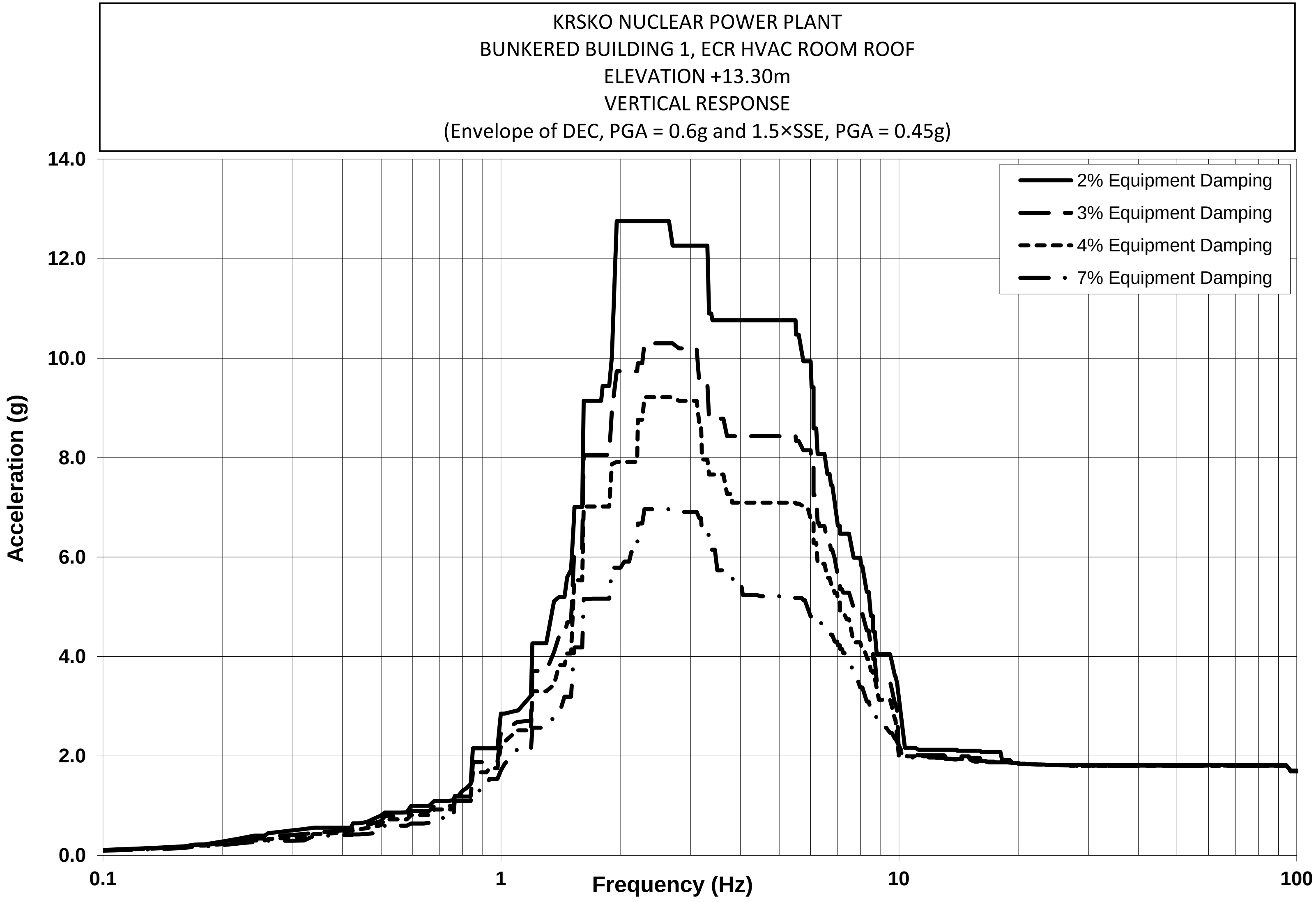
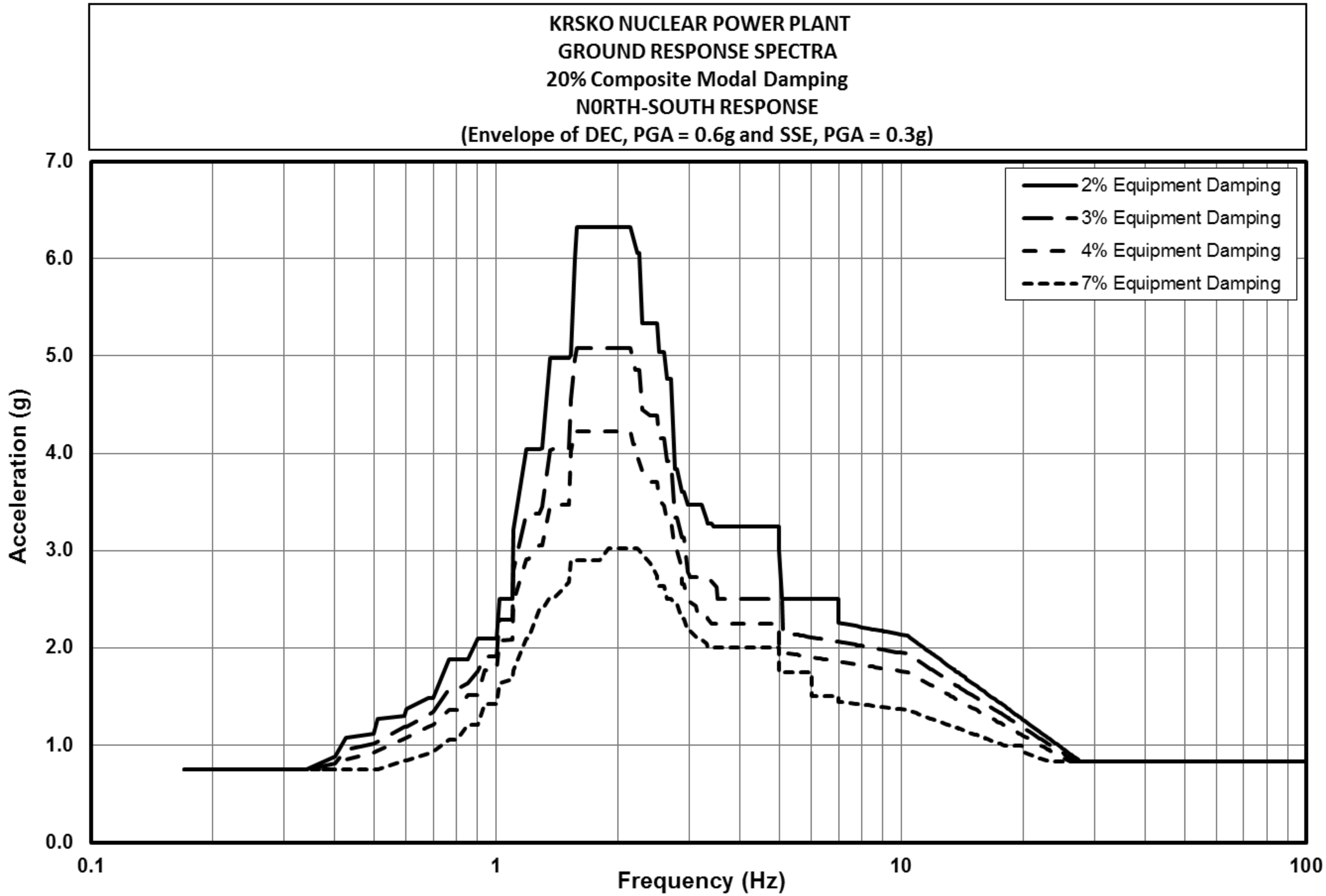

KRSKO NUCLEAR POWER PLANT
BUNKERD BUILDING 1, ECR HVAC ROOM ROOF
ELEVATION +13.30M
EAST - WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5×SSE, PGA = 0.45g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100

Figure C128


KRSKO NUCLEAR POWER PLANT
BUNKERED BUILDING 1, ECR HVAC ROOM ROOF
ELEVATION +13.30m
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and 1.5×SSE, PGA = 0.45g)
Acceleration (g)
Frequency (Hz)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
GROUND RESPONSE SPECTRA
20% Composite Modal Damping
N0RTH-SOUTH RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.1
1
10
100

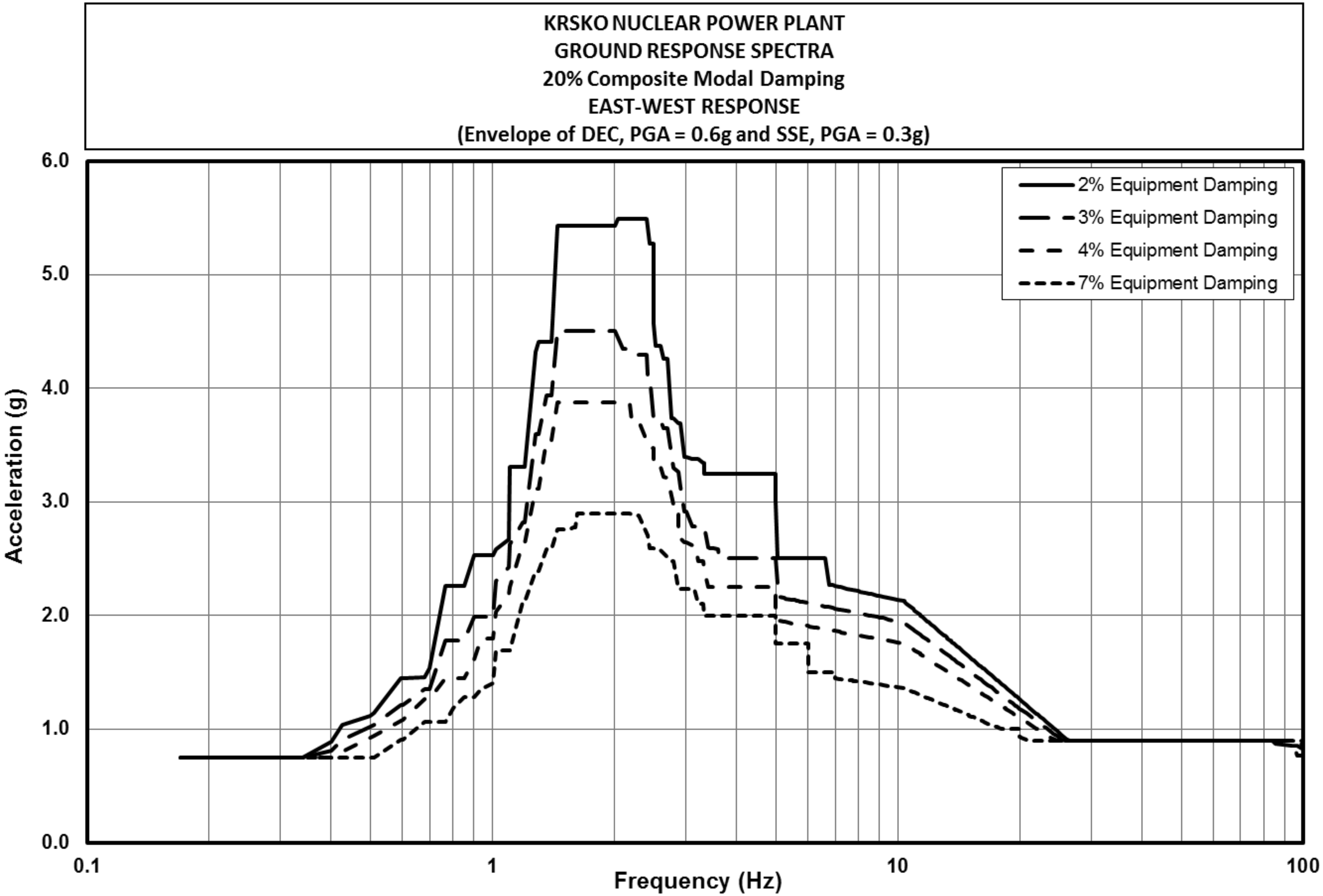
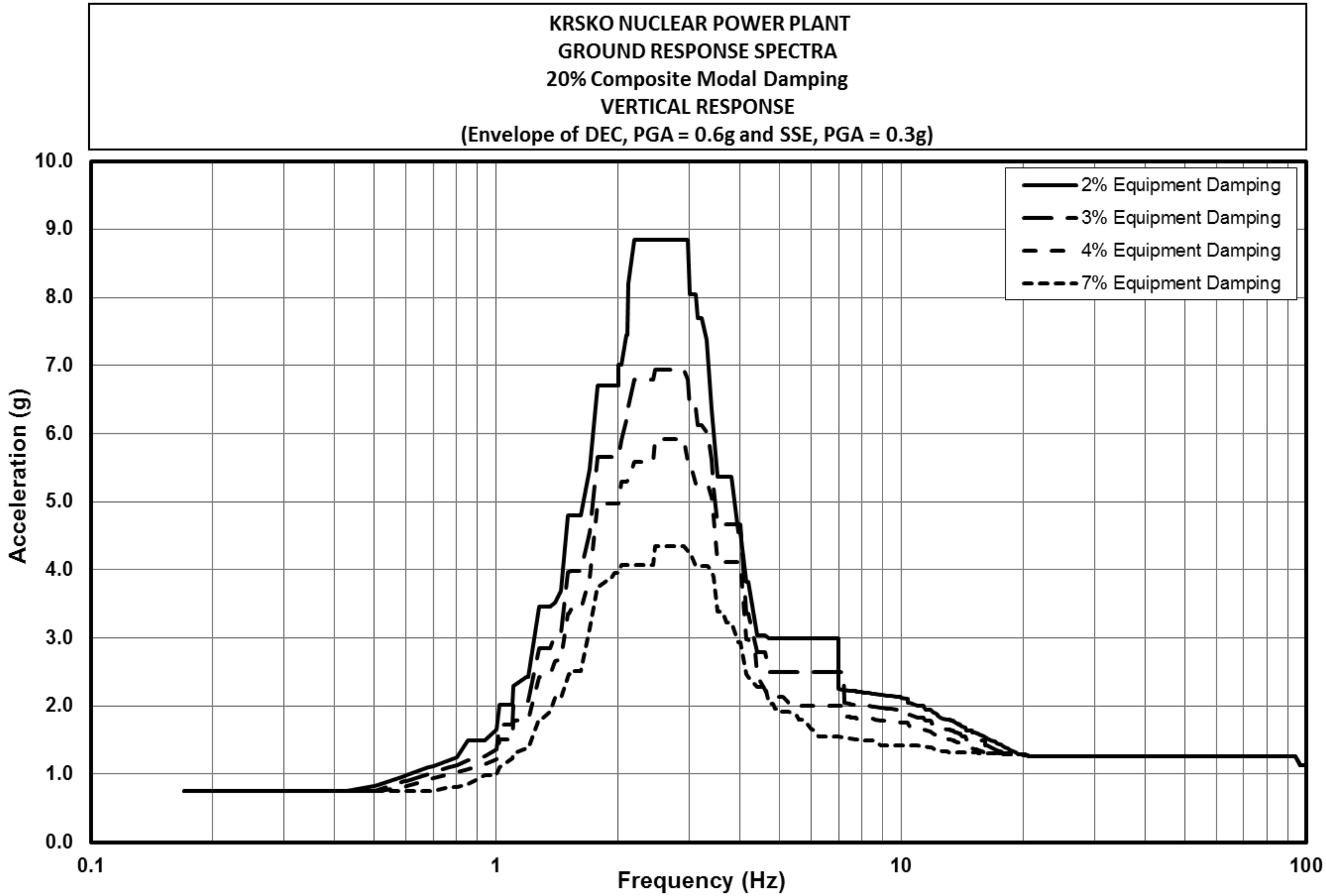

KRSKO NUCLEAR POWER PLANT
GROUND RESPONSE SPECTRA
20% Composite Modal Damping
EAST-WEST RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure C131


KRSKO NUCLEAR POWER PLANT
GROUND RESPONSE SPECTRA
20% Composite Modal Damping
VERTICAL RESPONSE
(Envelope of DEC, PGA = 0.6g and SSE, PGA = 0.3g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

APPENDIX D

TO

SP-S702-044687-000

FLOOR RESPONSE SPECTRA CURVES
FOR
SSC's IN THE WASTE MANIPULATION BUILDING 1
FOR
OPERATING BASIS EARTHQUAKE (OBE)
AND SAFE-SHUTDOWN EARTHQUAKE (SSE)

KRSKO NUCLEAR POWER PLANT
KRSKO, SLOVENIA

Floor Response Spectra Figure Matrix
for
Waste Manipulation Building 1

Elevation	**FRS Figure #**					
	OBE (0.3 g)			**SSE (0.6 g)**		
	East-West	**North-South**	**Vertical**	**East-West**	**North-South**	**Vertical**
Ground Floor 100.3 m	D1	D2	D3	D4	D5	D6
Reservoir-Foundation 103.1 m	D7	D8	D9	D10	D11	D12
Interstorey 105.0 m	D13	D14	D15	D16	D17	D18
1st Floor 109.9 m	D19	D20	D21	D22	D23	D24
Roof 114.9-115.7 m	D25	D26	D27	D28	D29	D30

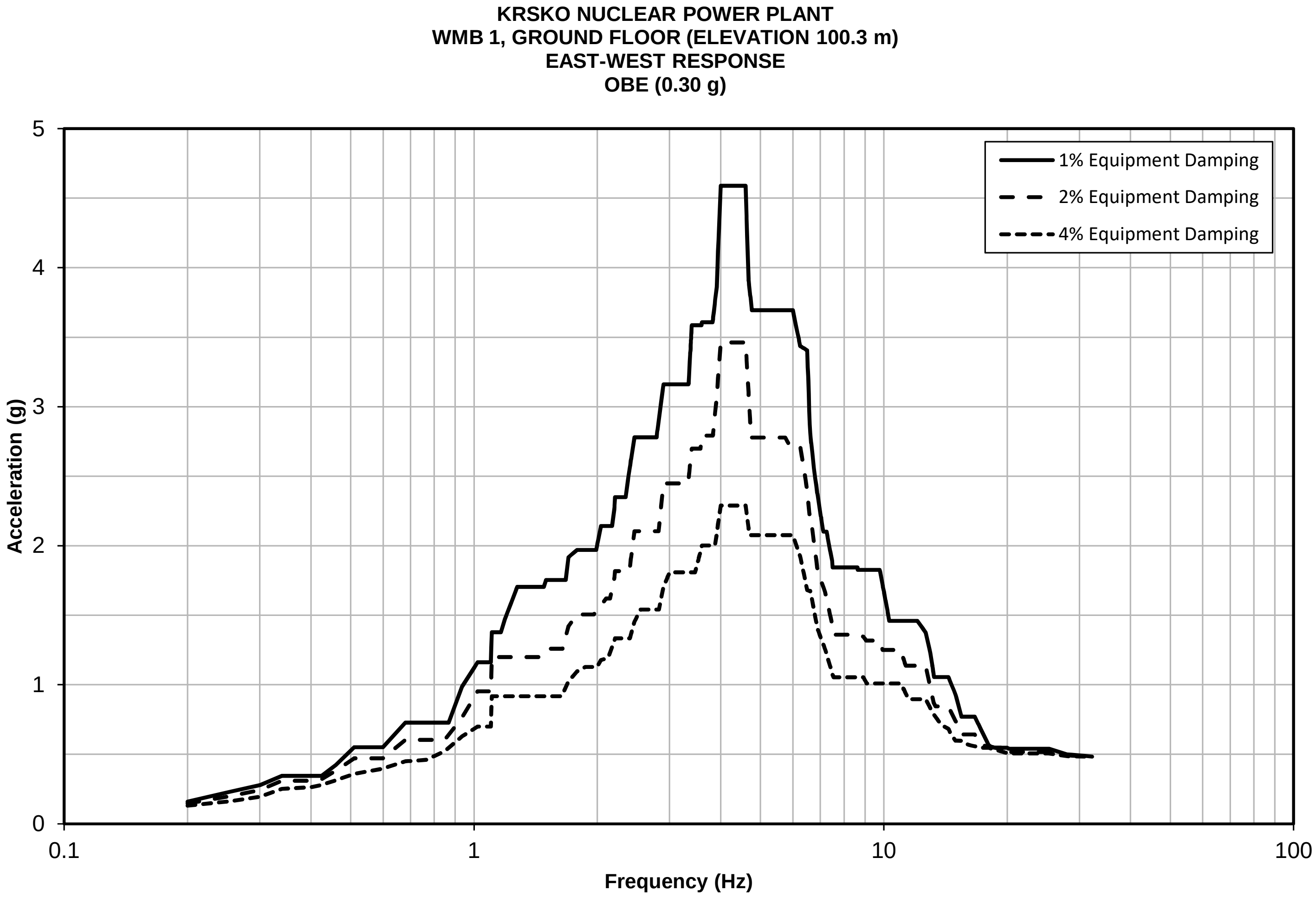
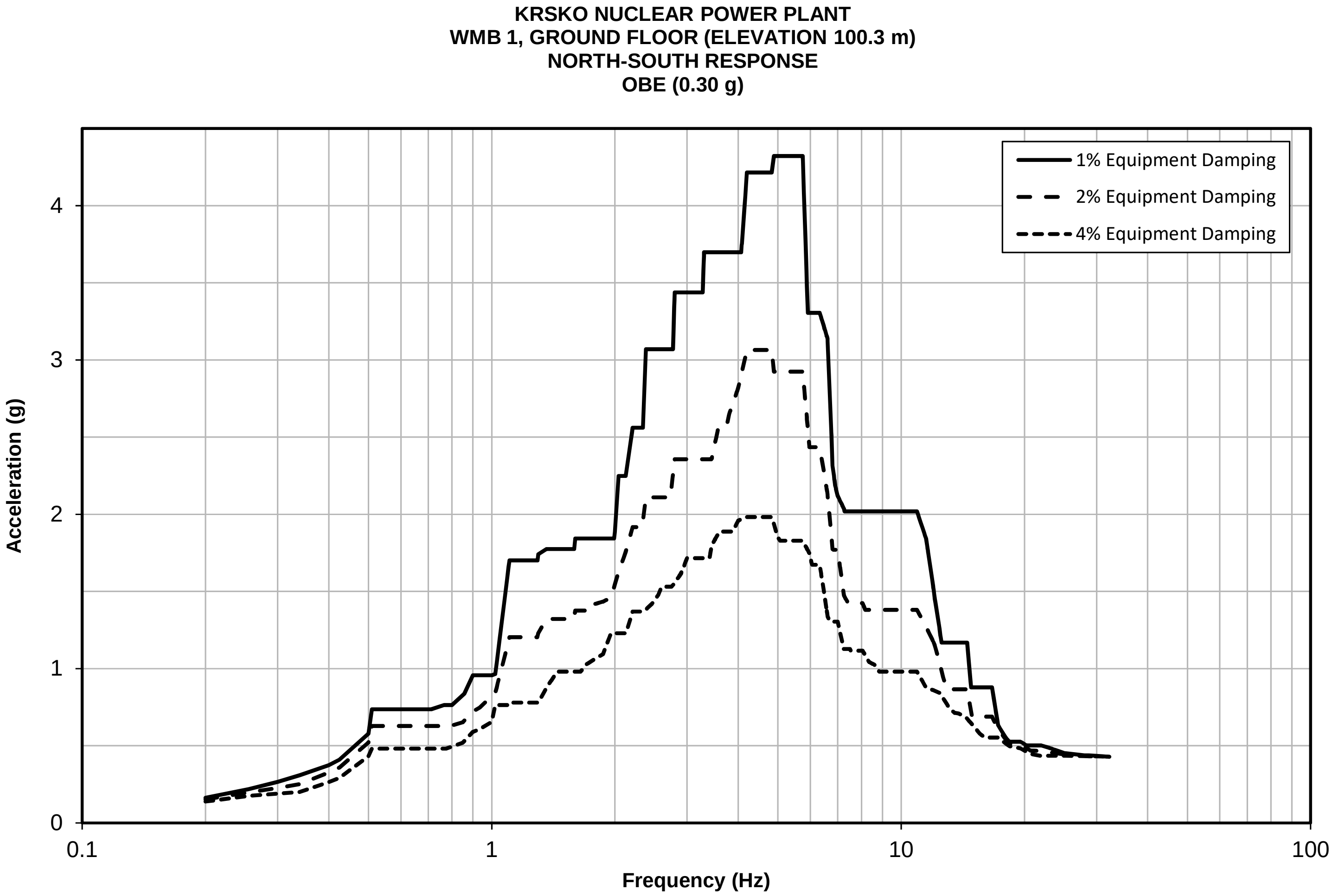
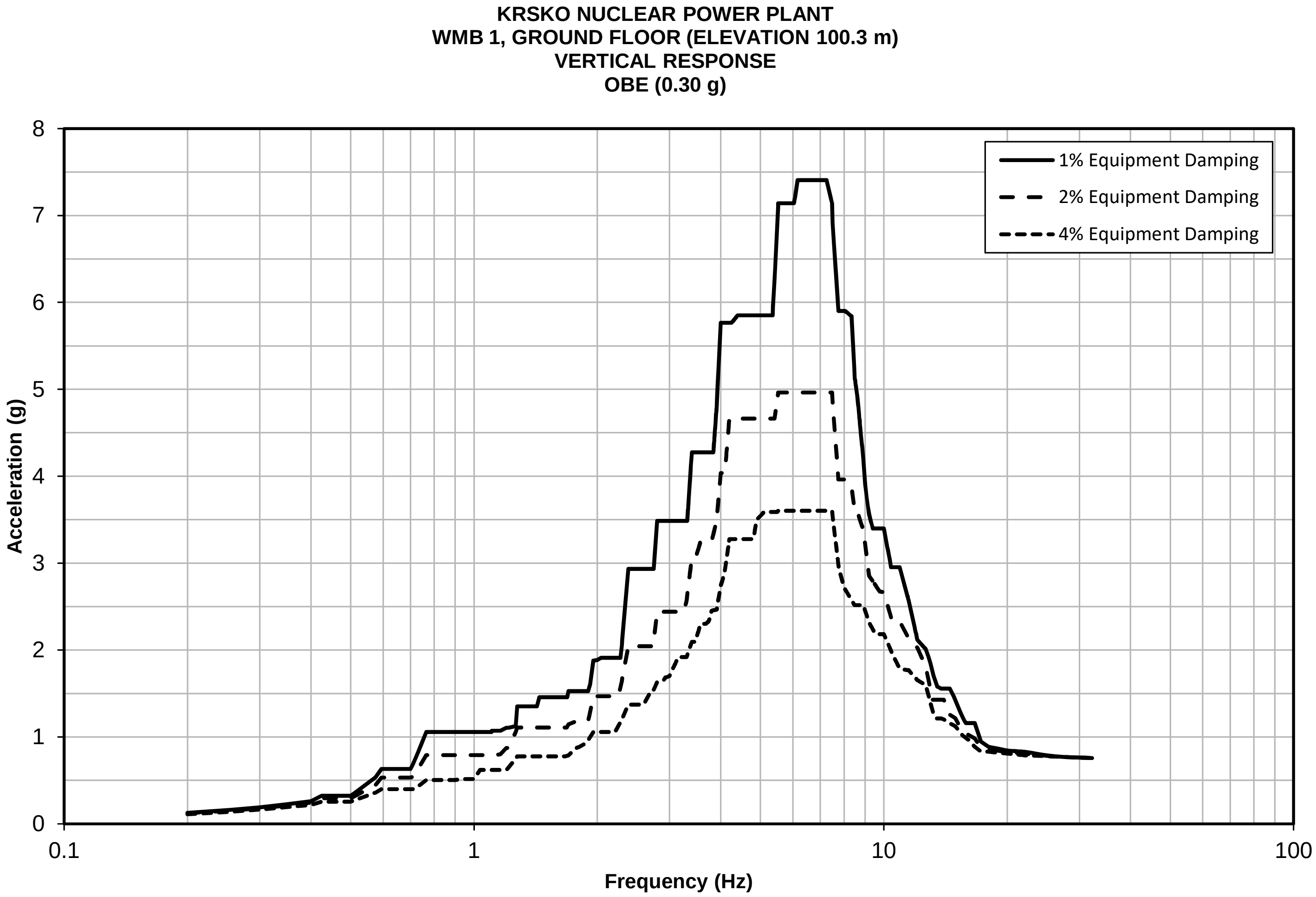
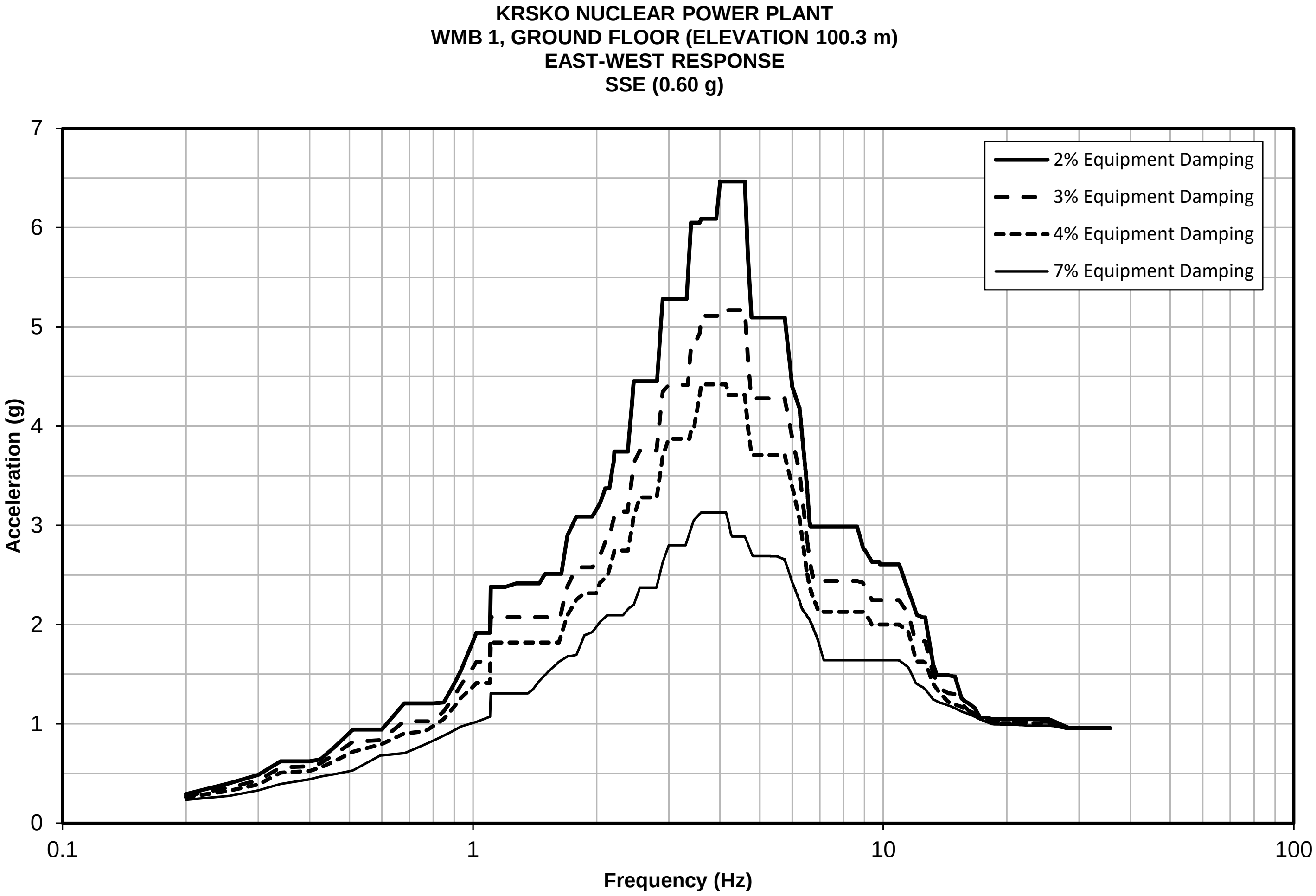

KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
EAST-WEST RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure D1


KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
NORTH-SOUTH RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
VERTICAL RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping



KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
EAST-WEST RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

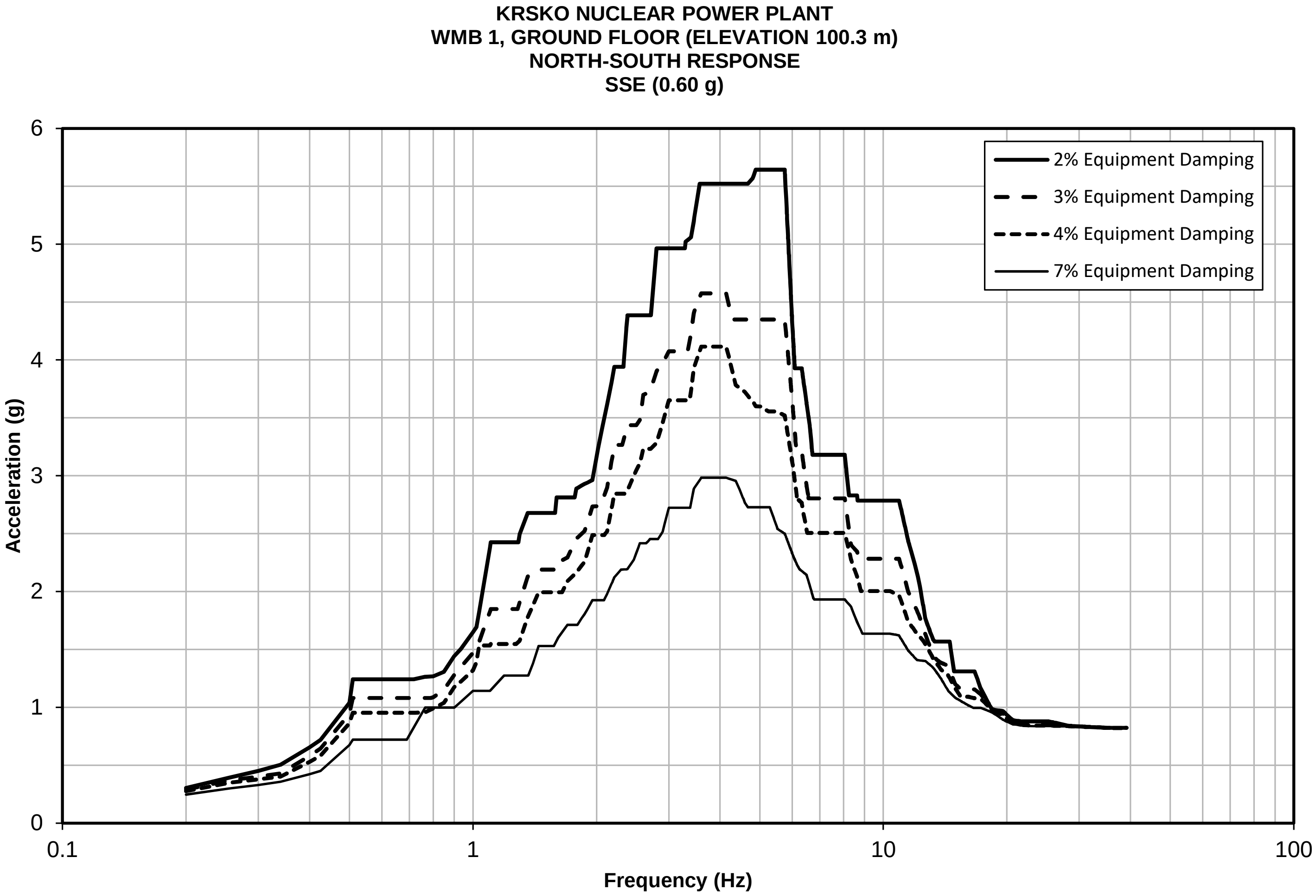

KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
NORTH-SOUTH RESPONSE
SSE (0.60 g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
0
1
2
3
4
5
6
0.1
1
10
100
Frequency (Hz)

Figure D5

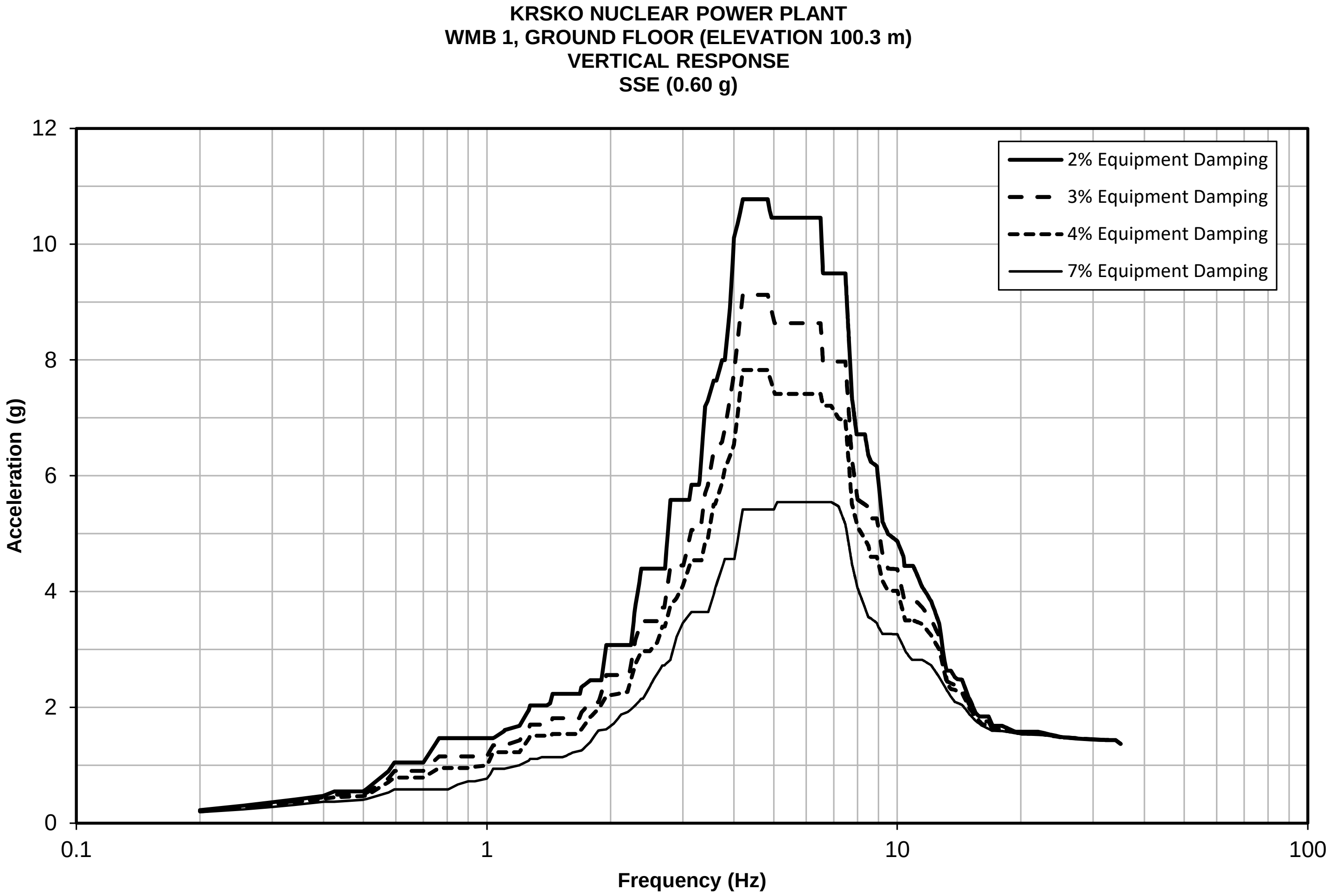
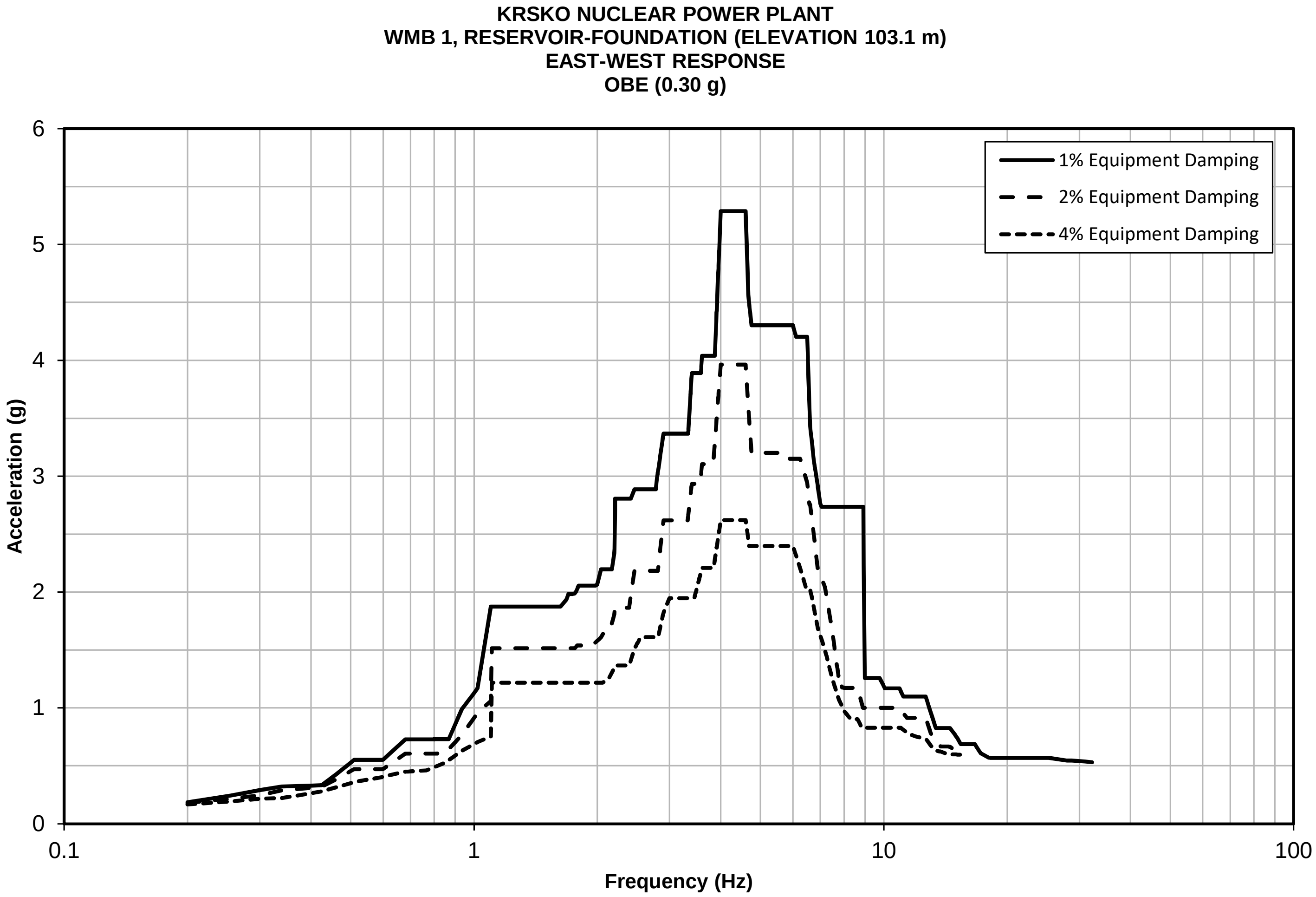
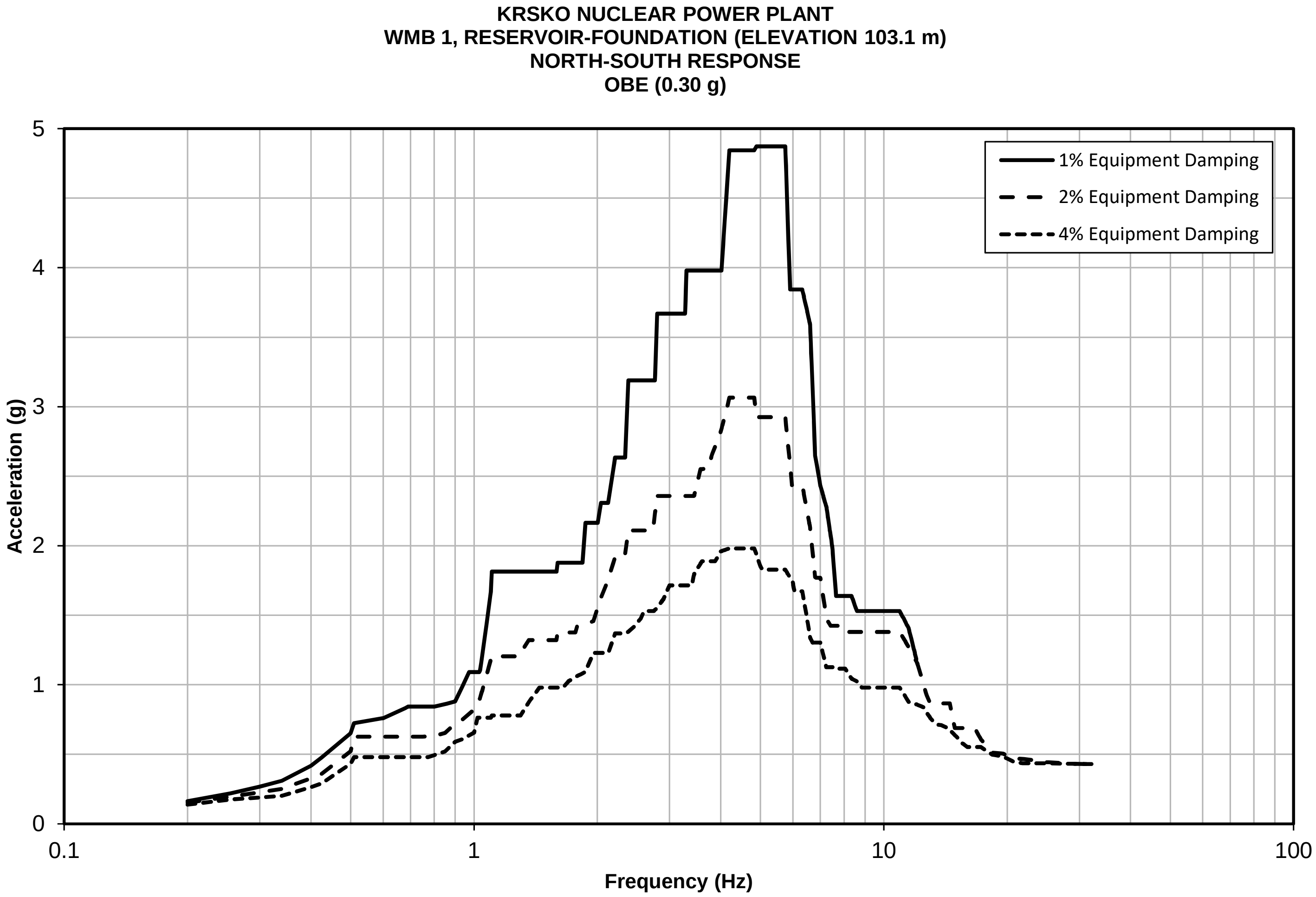
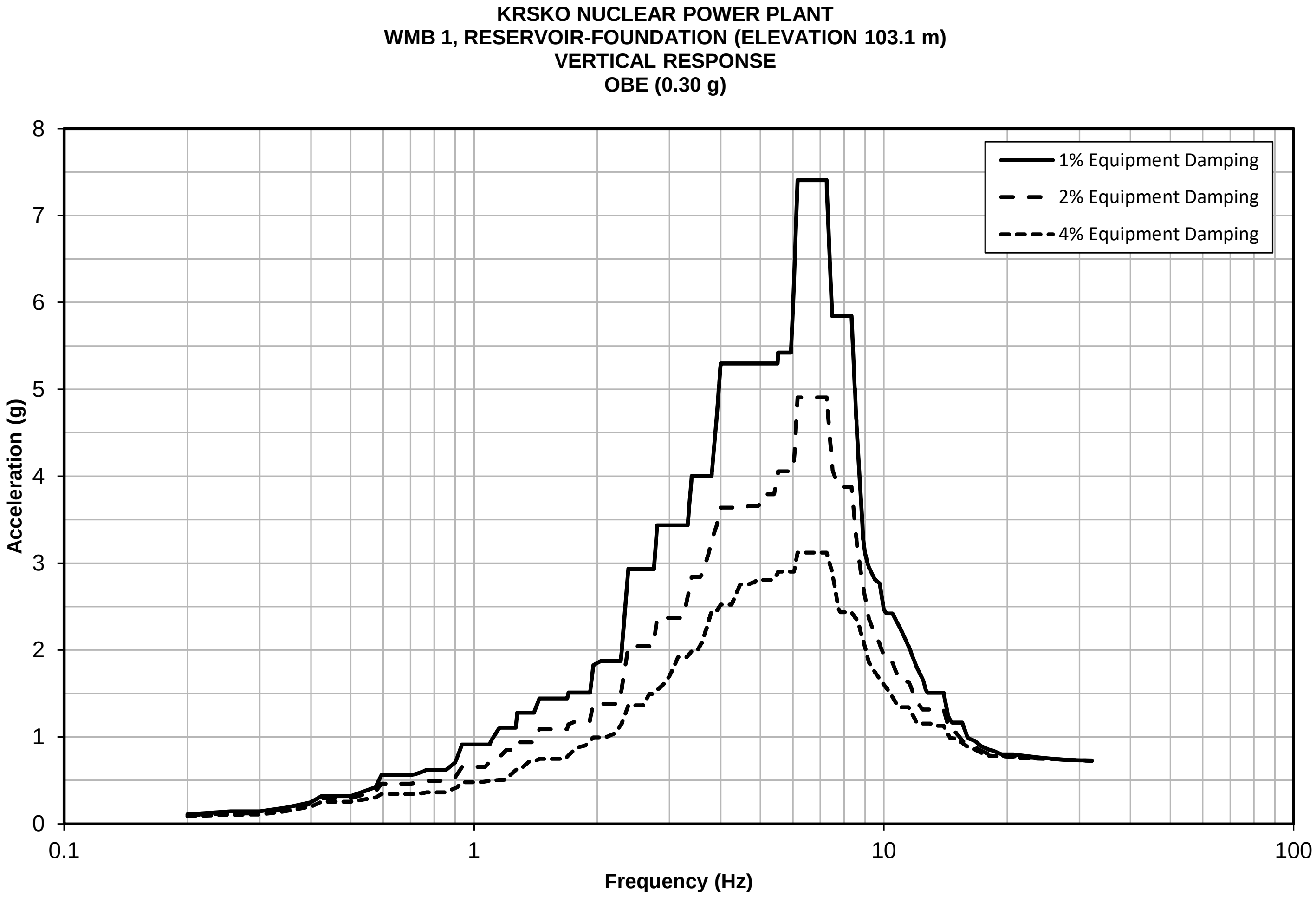
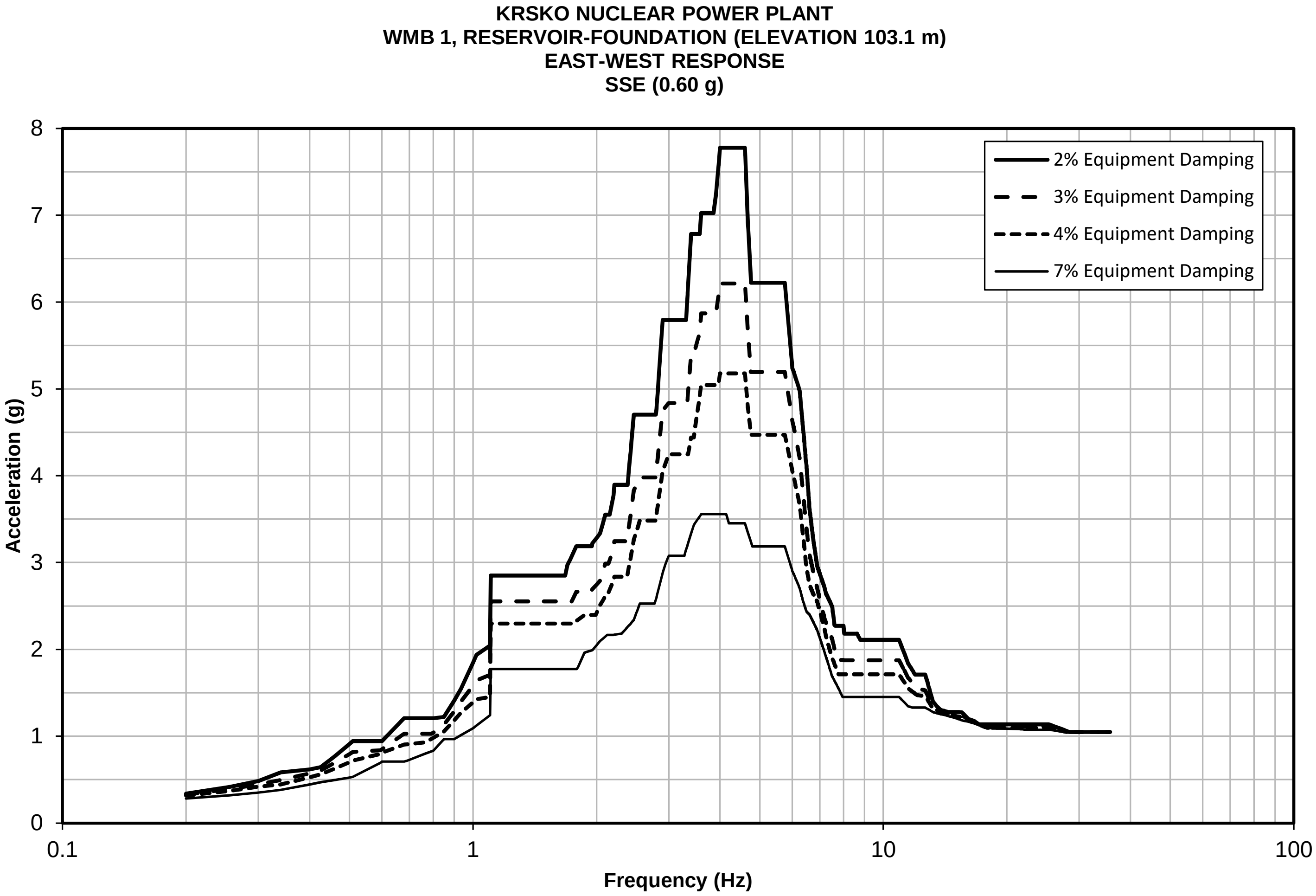

KRSKO NUCLEAR POWER PLANT
WMB 1, GROUND FLOOR (ELEVATION 100.3 m)
VERTICAL RESPONSE
SSE (0.60 g)
Acceleration (g)
0
2
4
6
8
10
12
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

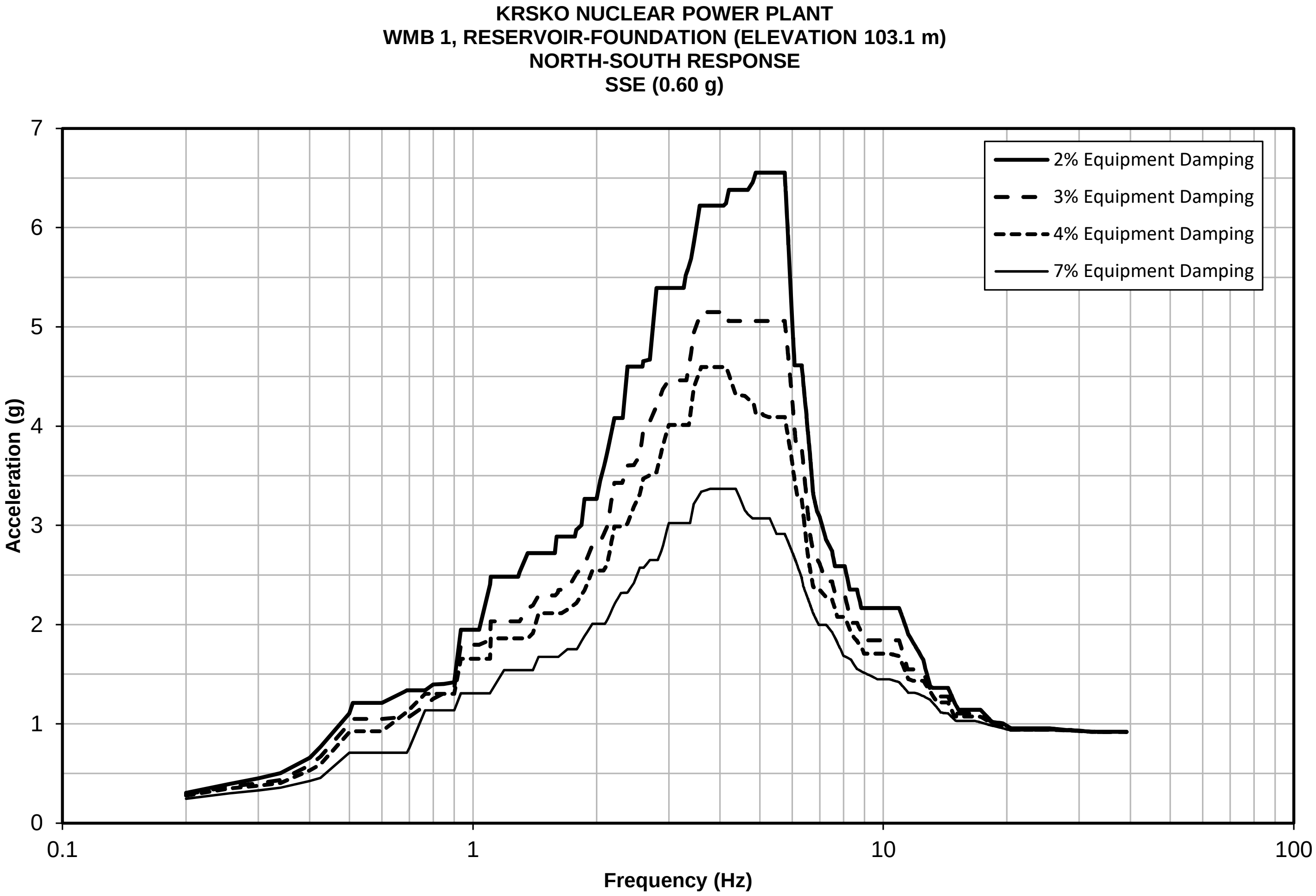
Figure D6

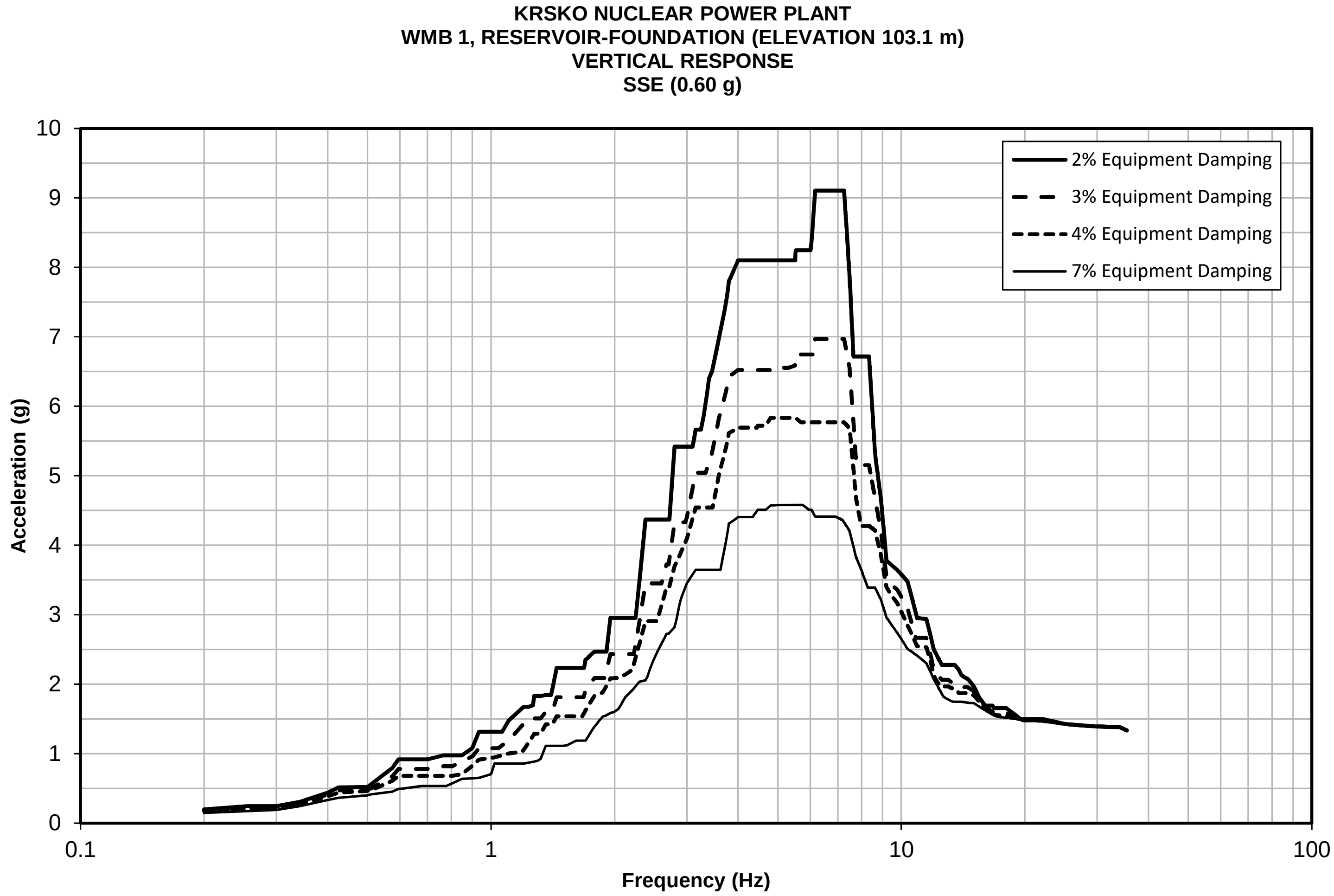

KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
EAST-WEST RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

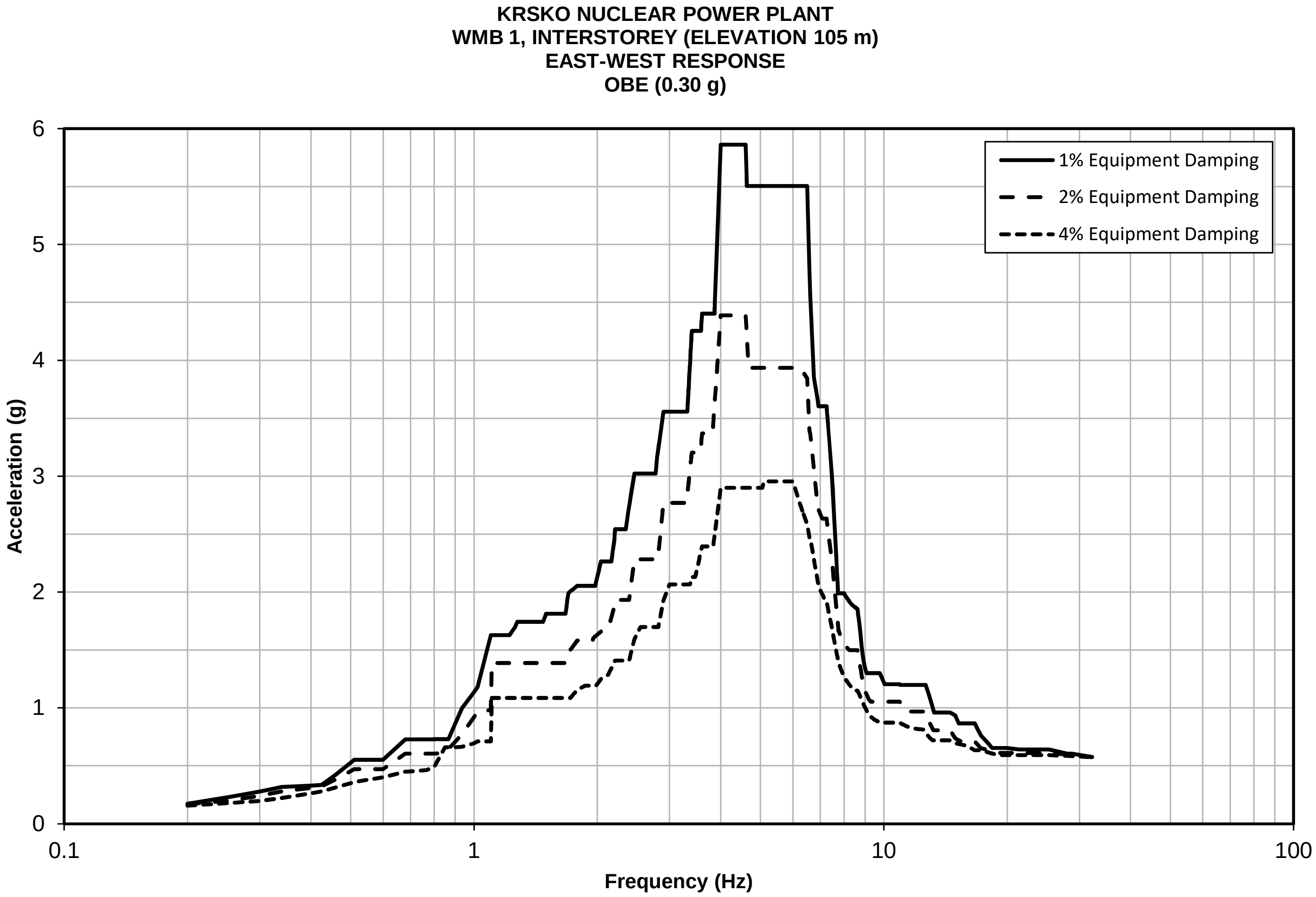

KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
NORTH-SOUTH RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
VERTICAL RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
1
2
3
4
5
6
7
8
0.1
1
10
100
Frequency (Hz)

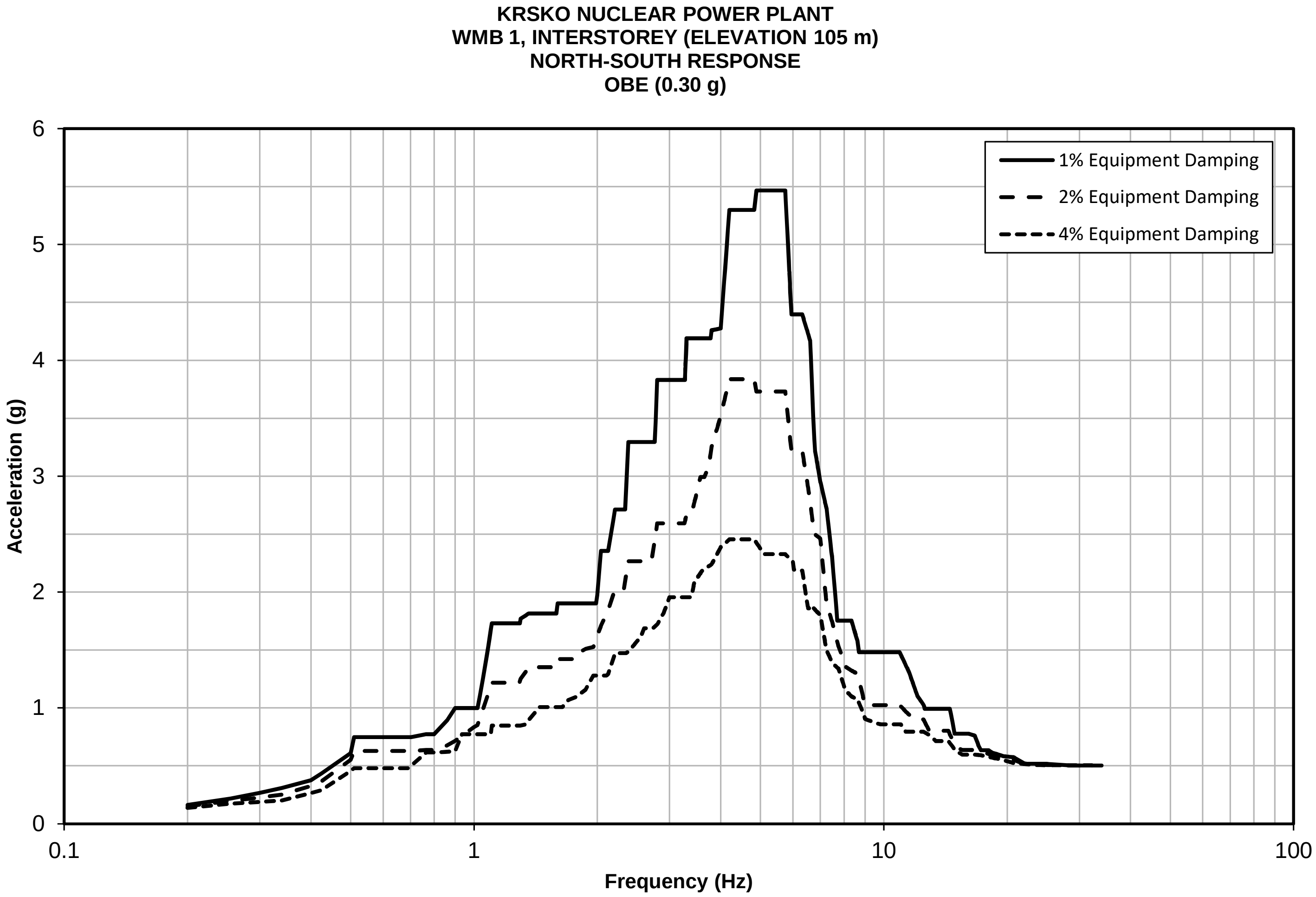

KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
EAST-WEST RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
NORTH-SOUTH RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
0
1
2
3
4
5
6
7
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
WMB 1, RESERVOIR-FOUNDATION (ELEVATION 103.1 m)
VERTICAL RESPONSE
SSE (0.60 g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
9
10
0.1
1
10
100



KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
EAST-WEST RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
NORTH-SOUTH RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0
1
2
3
4
5
6
0.1
1
10
100

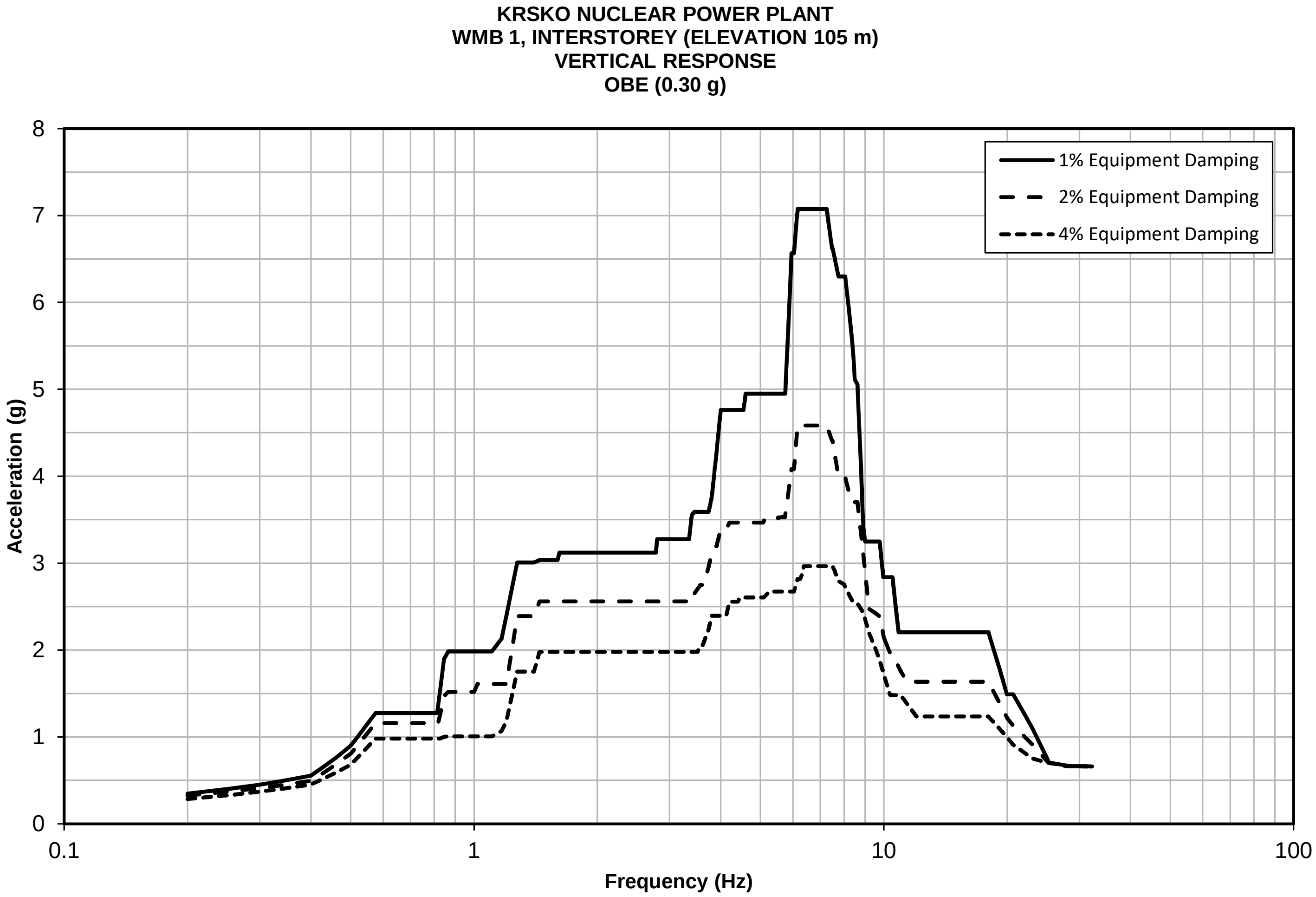
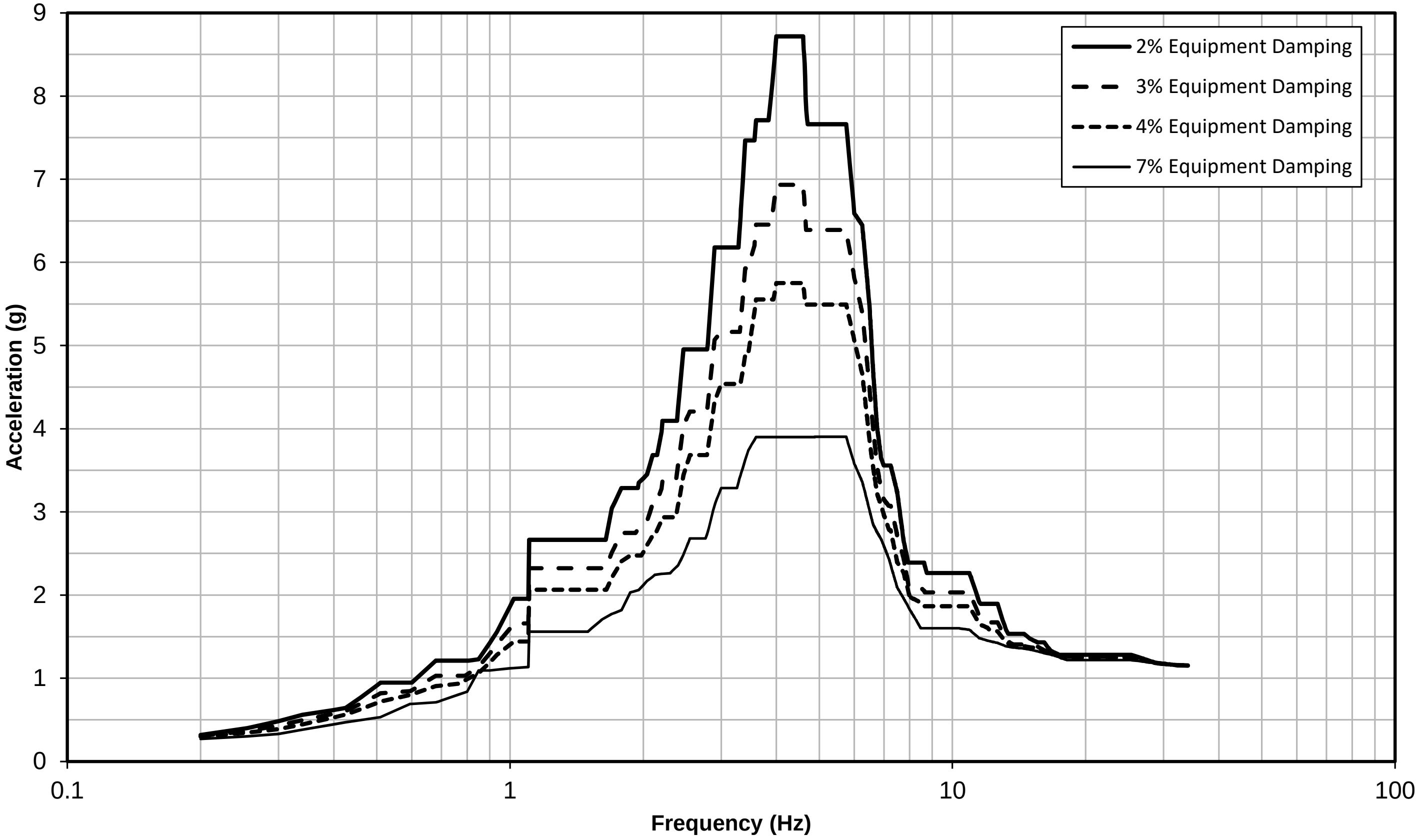
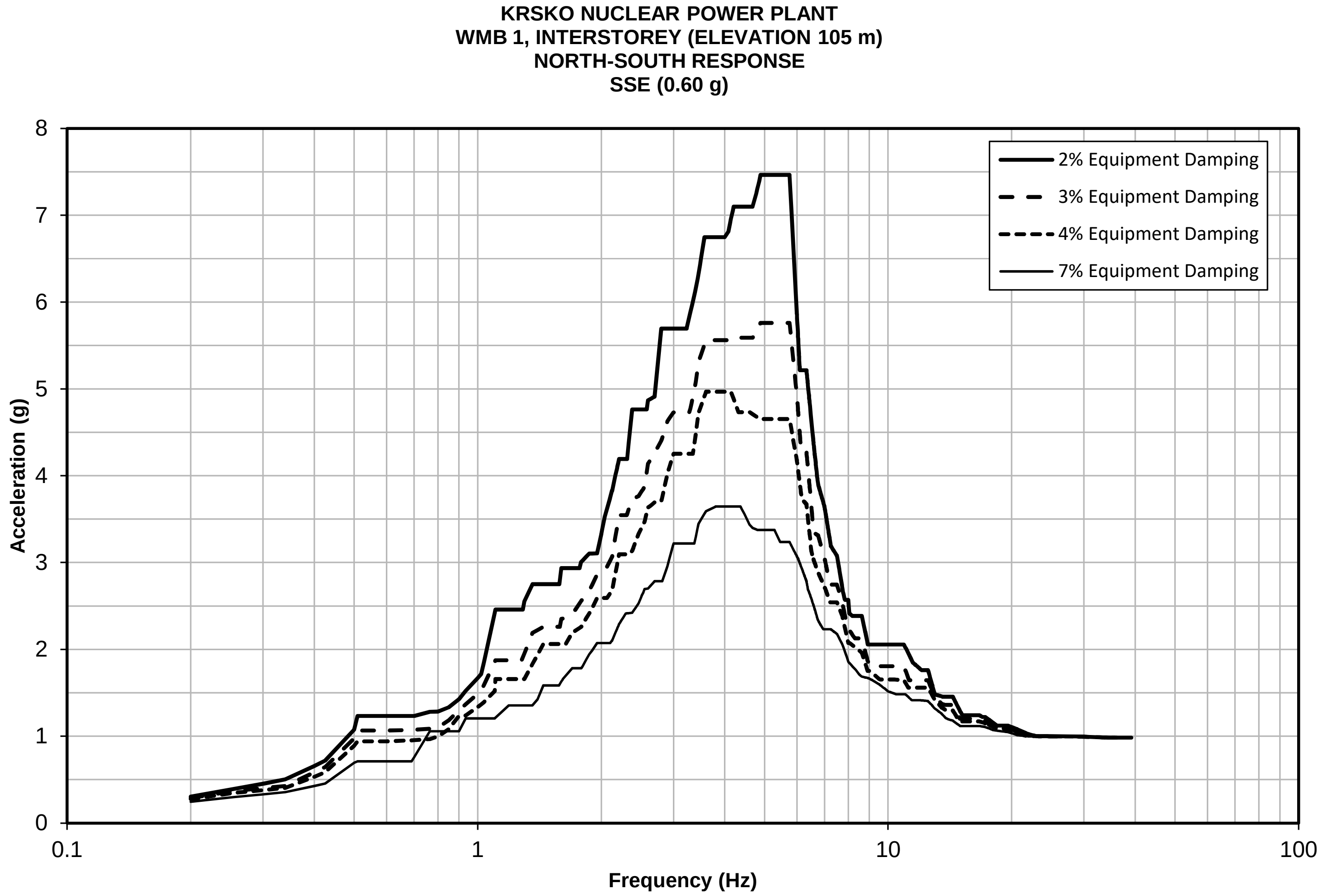

KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
VERTICAL RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
0.1
1
10
100

Figure D15

KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
EAST-WEST RESPONSE
SSE (0.60 g)




KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
NORTH-SOUTH RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

KRSKO NUCLEAR POWER PLANT
WMB 1, INTERSTOREY (ELEVATION 105 m)
VERTICAL RESPONSE
SSE (0.60 g)

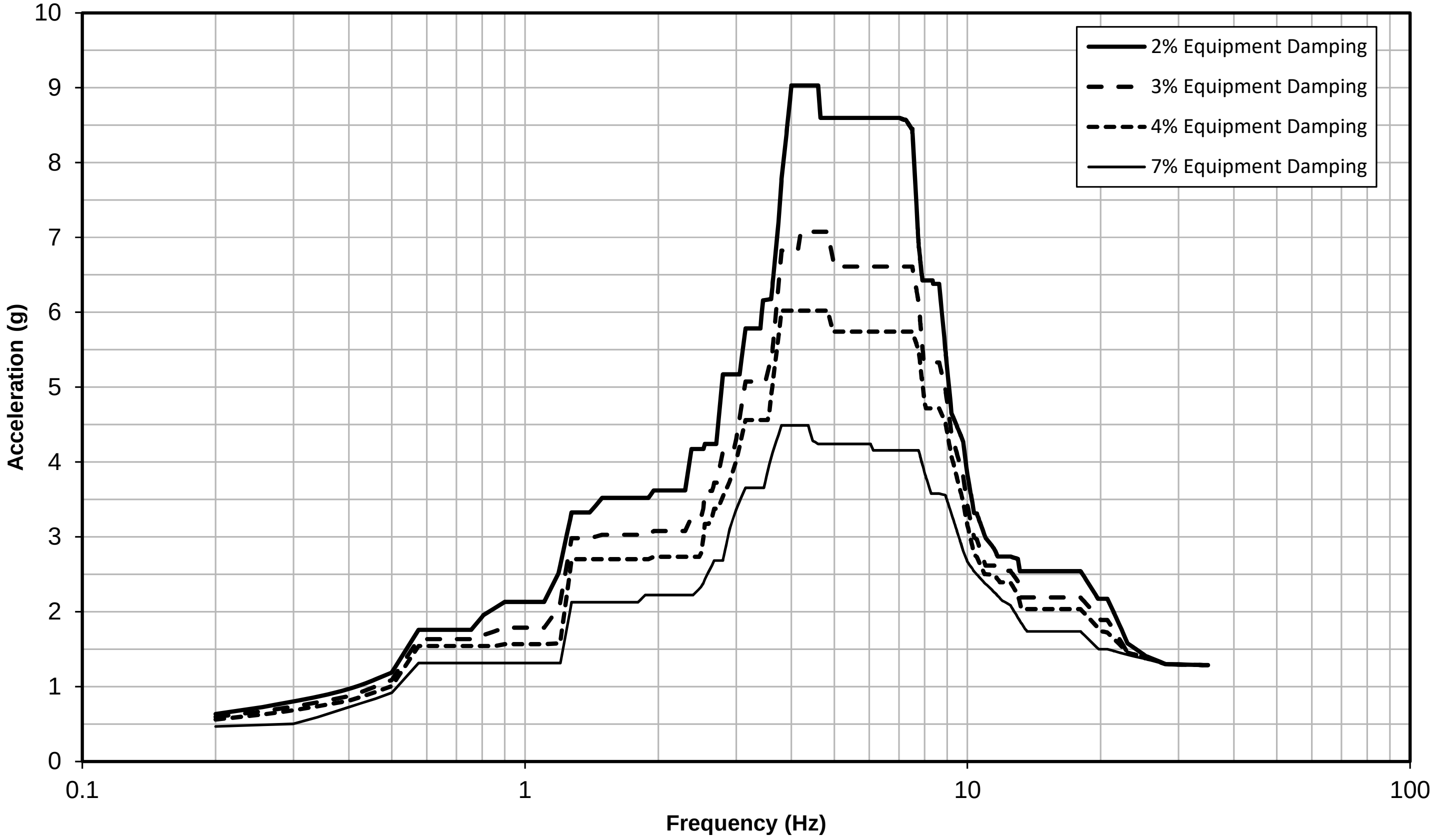
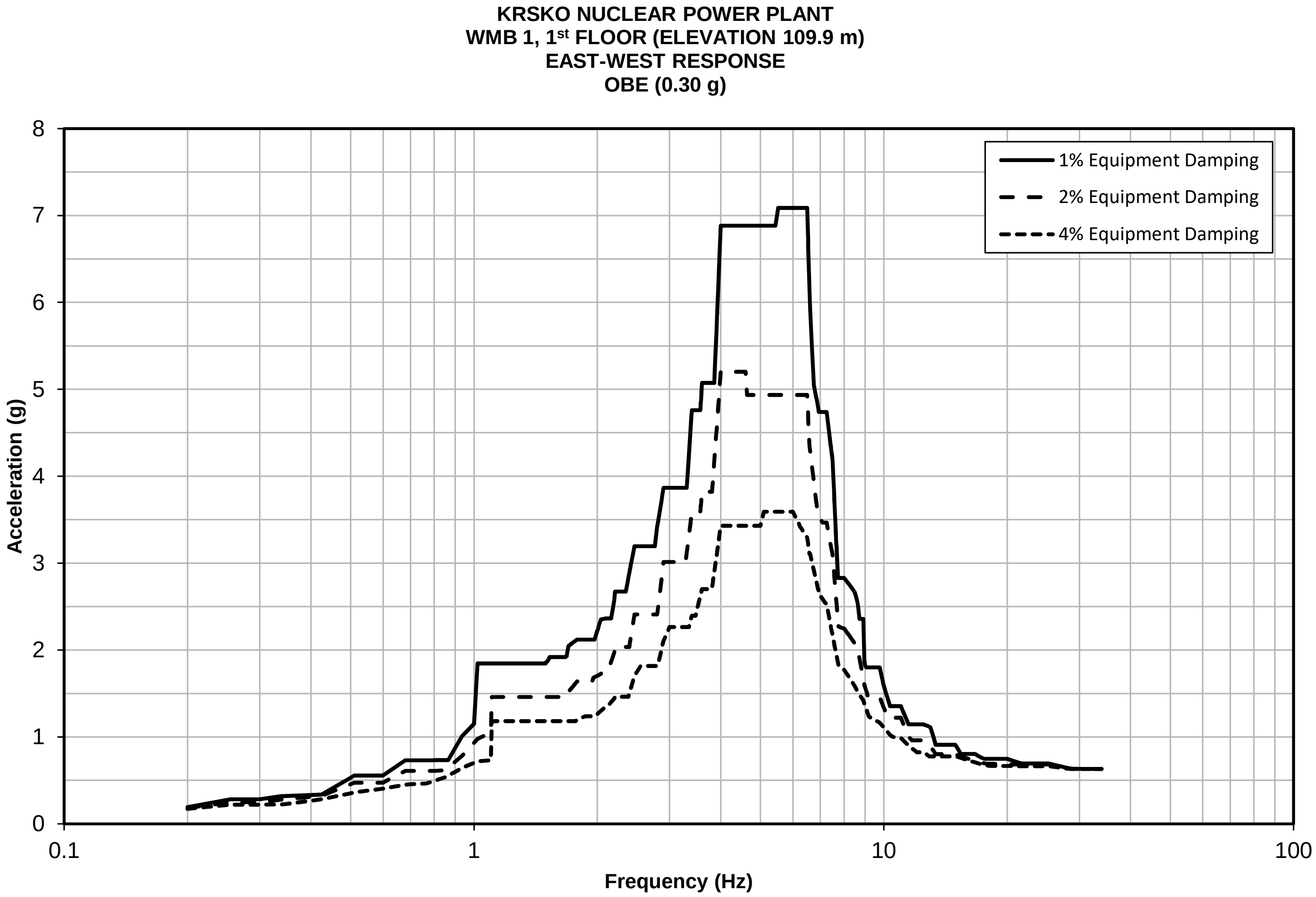
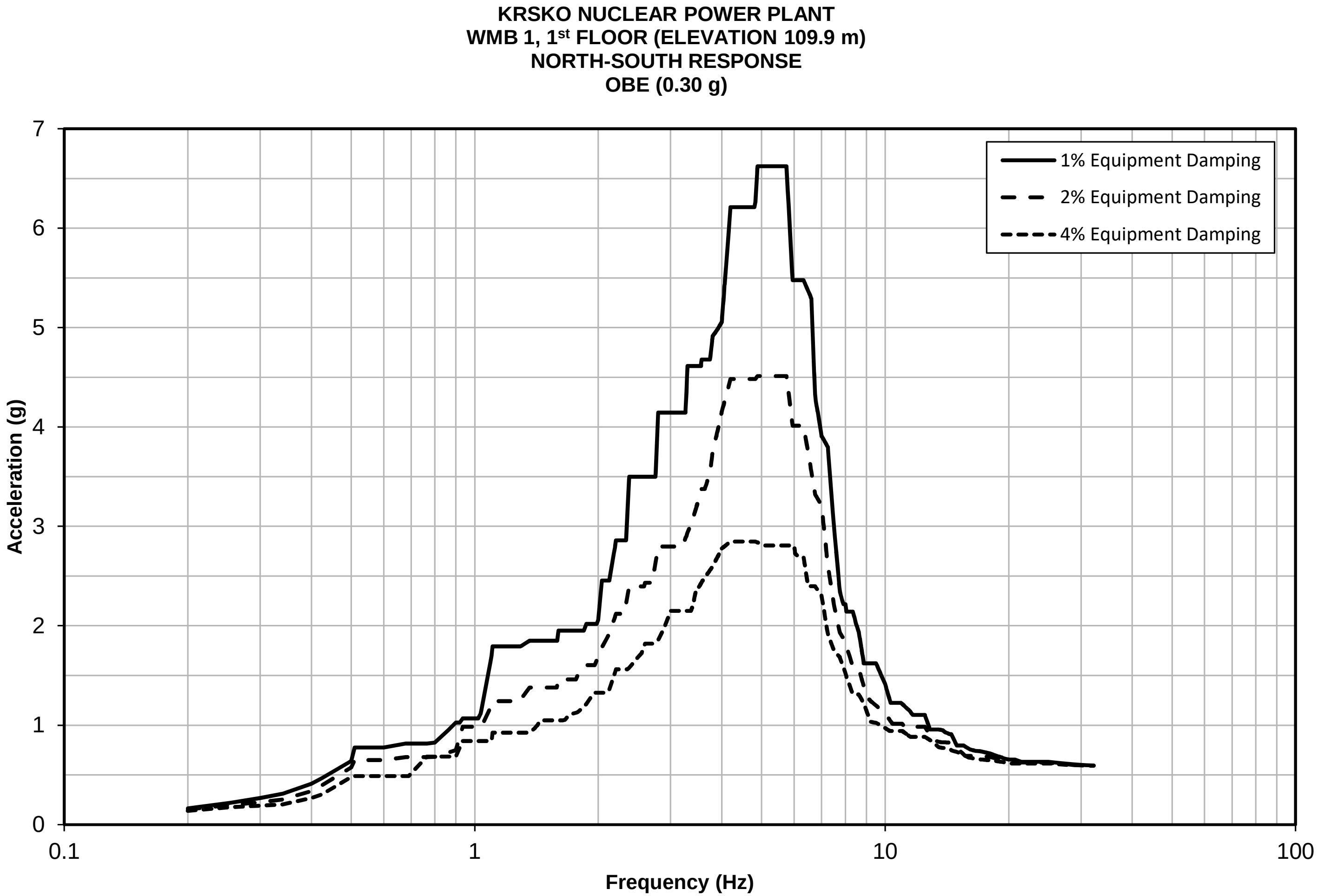
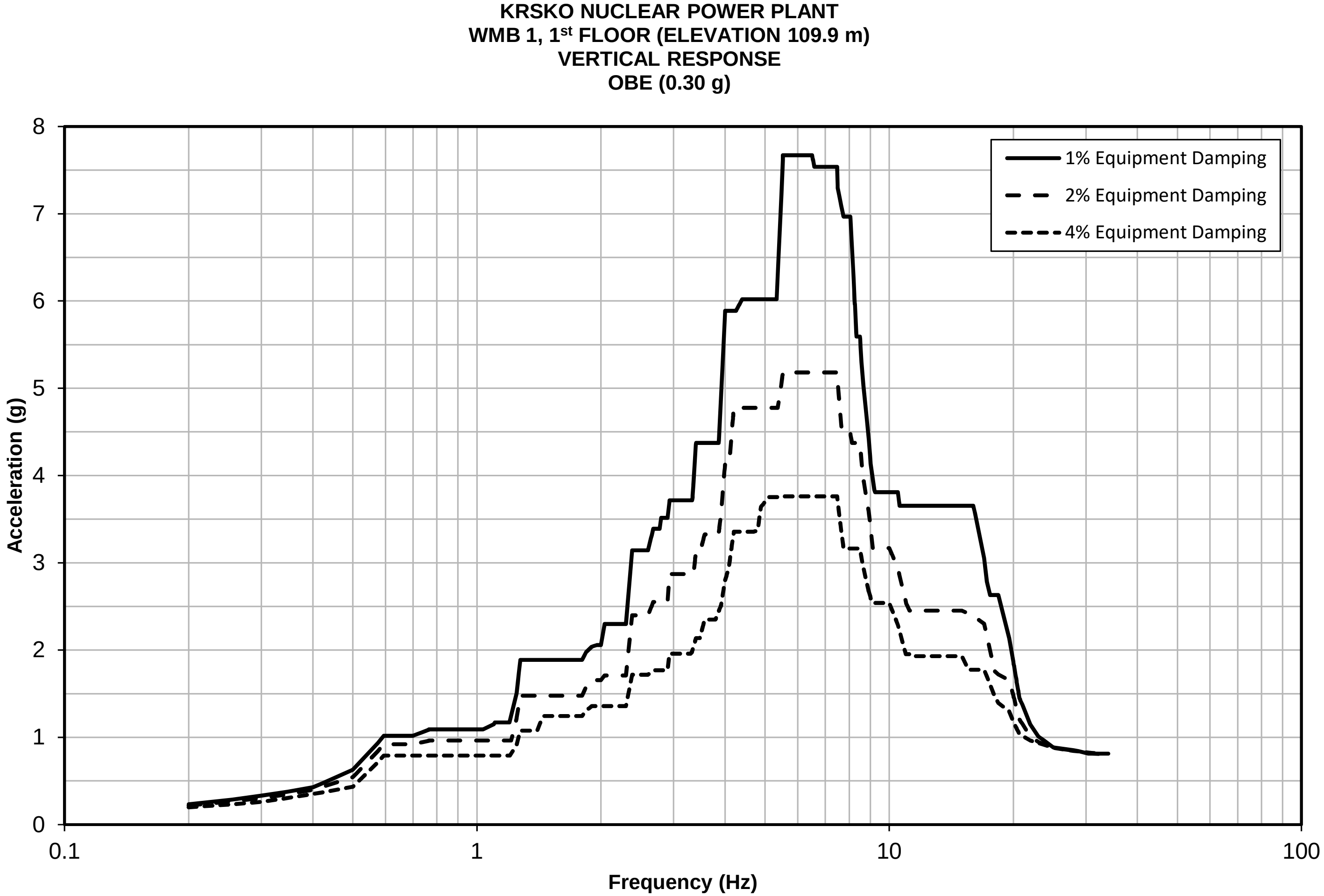
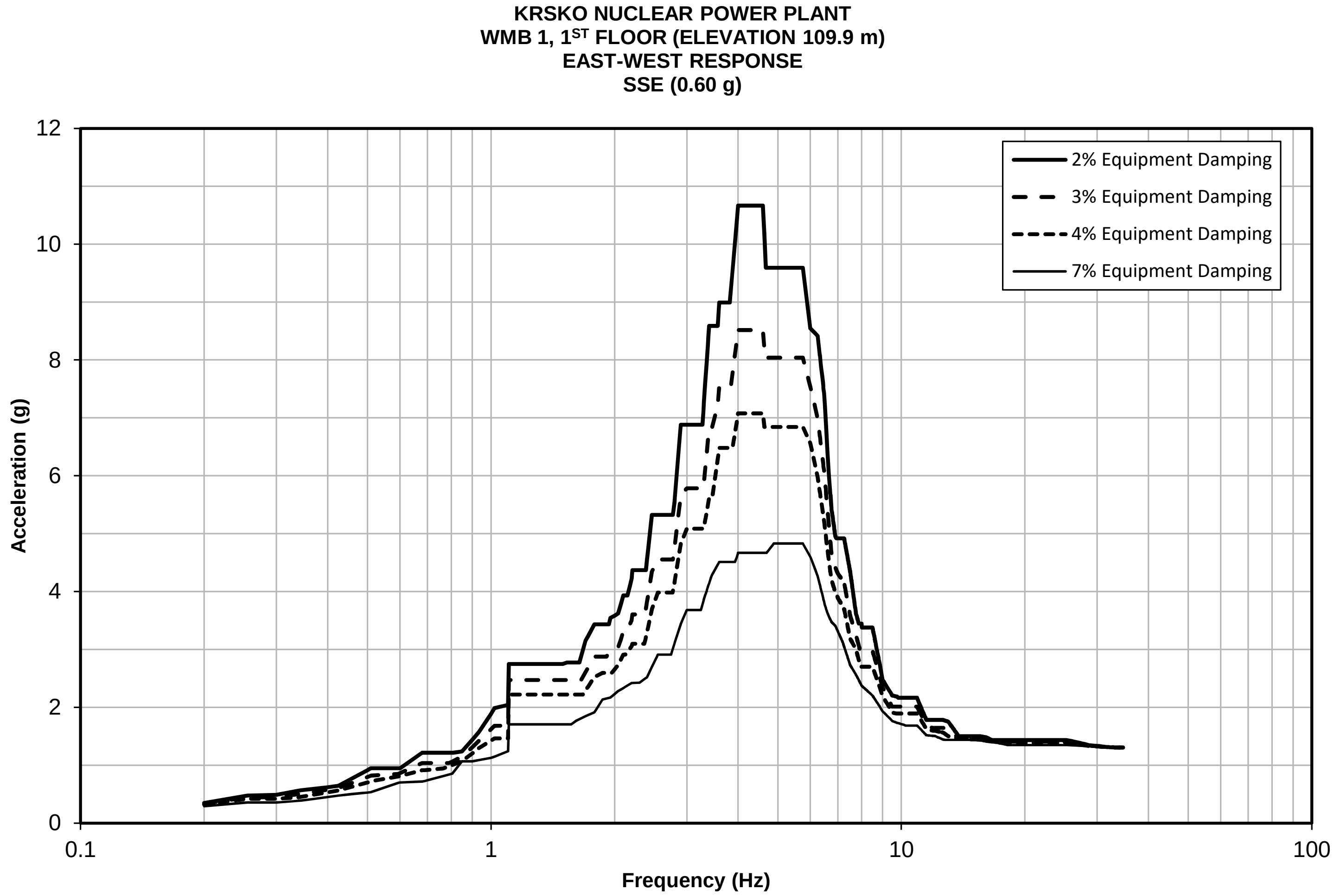


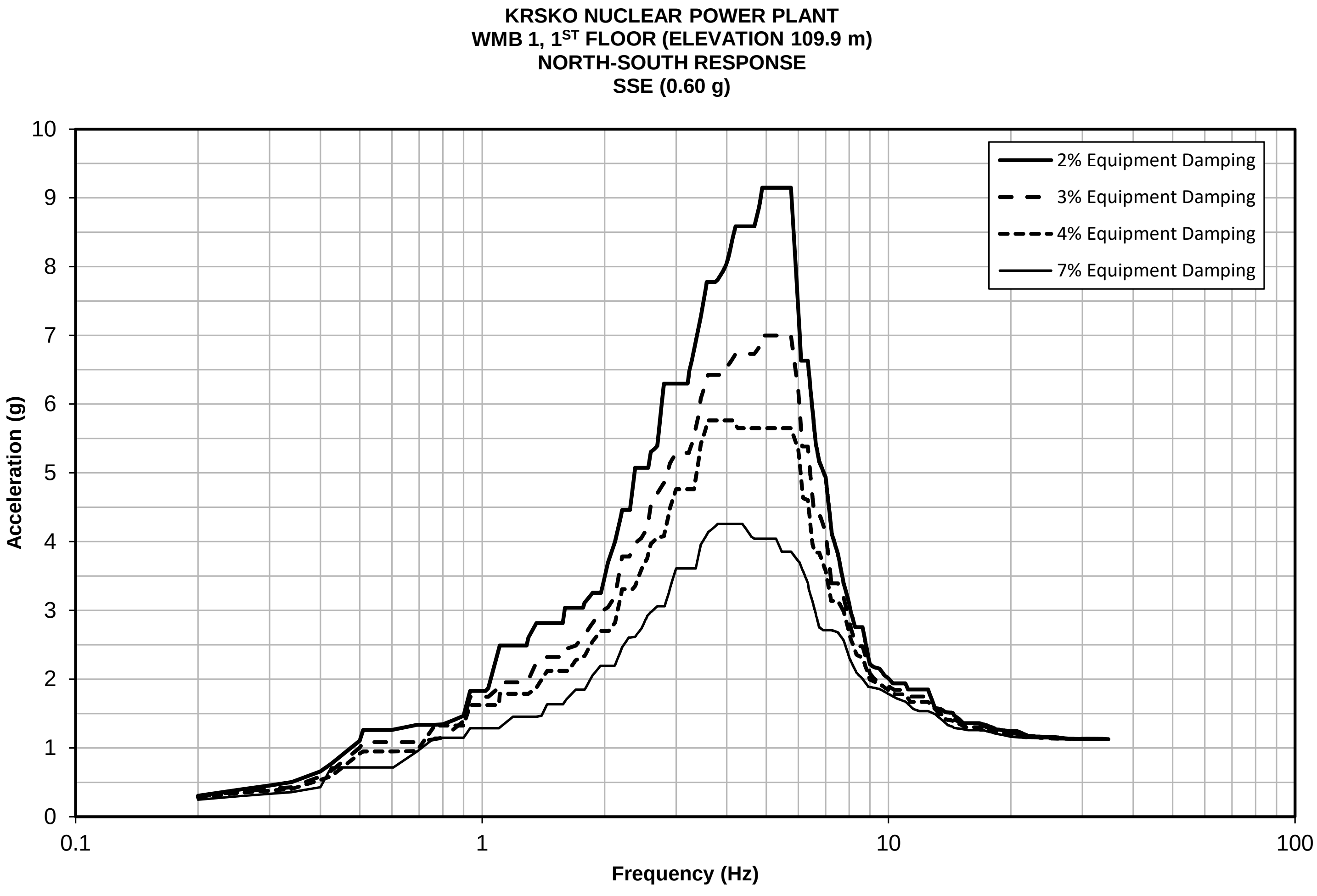
Figure D18

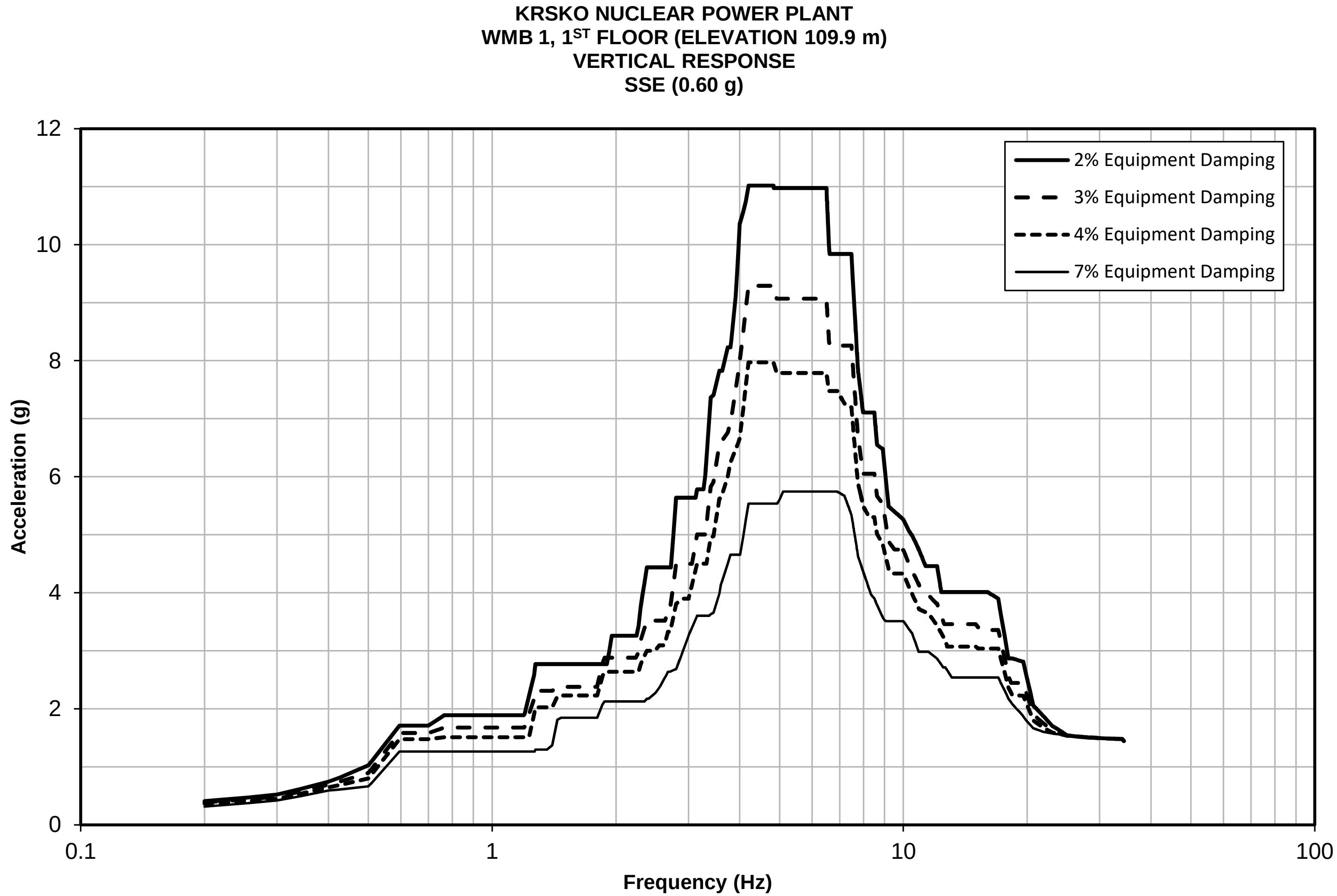

KRSKO NUCLEAR POWER PLANT
WMB 1, 1st FLOOR (ELEVATION 109.9 m)
EAST-WEST RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
0
1
2
3
4
5
6
7
8
0.1
1
10
100

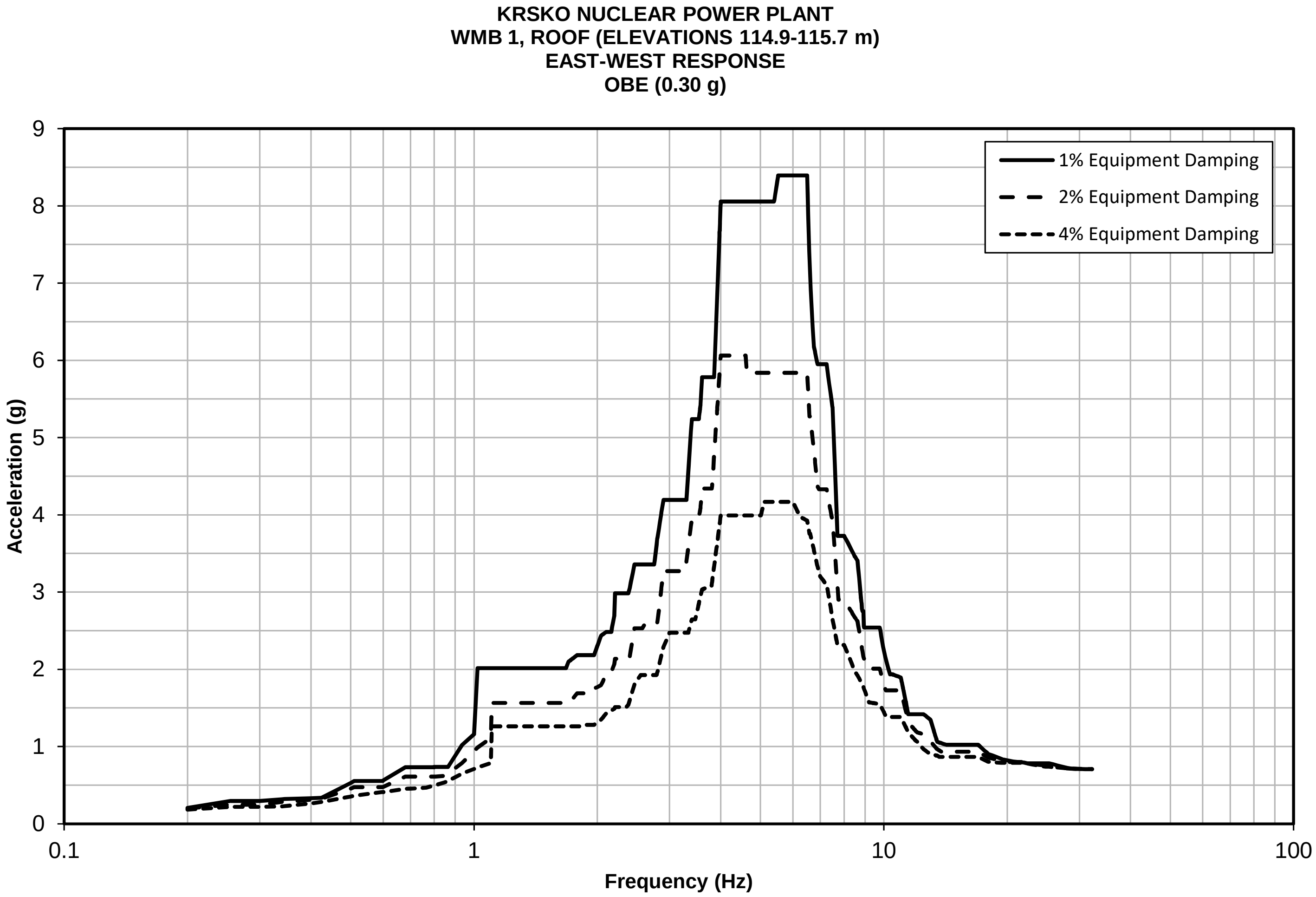

KRSKO NUCLEAR POWER PLANT
WMB 1, 1st FLOOR (ELEVATION 109.9 m)
NORTH-SOUTH RESPONSE
OBE (0.30 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
0.1
1
10
100
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping

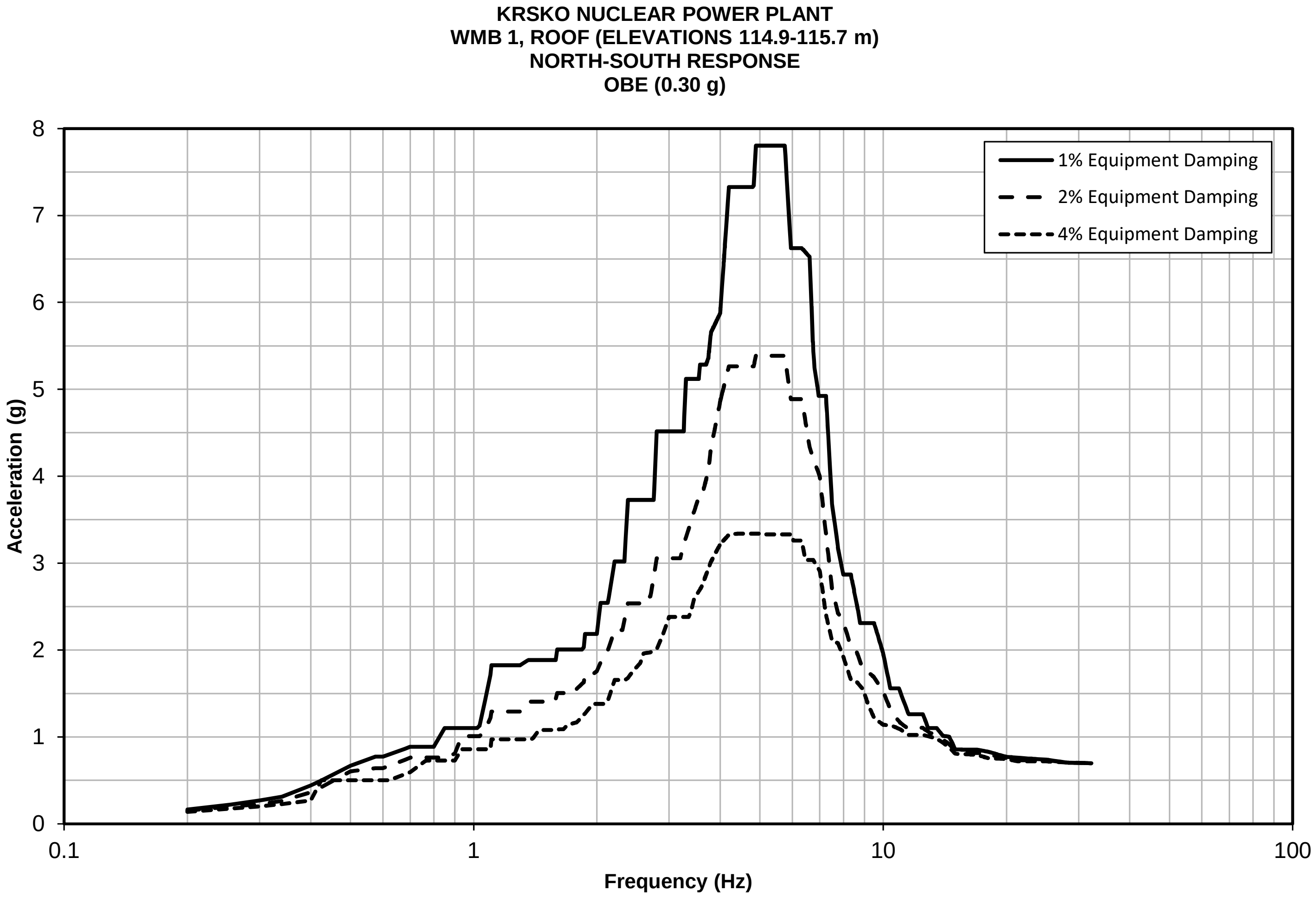

KRSKO NUCLEAR POWER PLANT
WMB 1, 1st FLOOR (ELEVATION 109.9 m)
VERTICAL RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
1
2
3
4
5
6
7
8
Frequency (Hz)
0.1
1
10
100

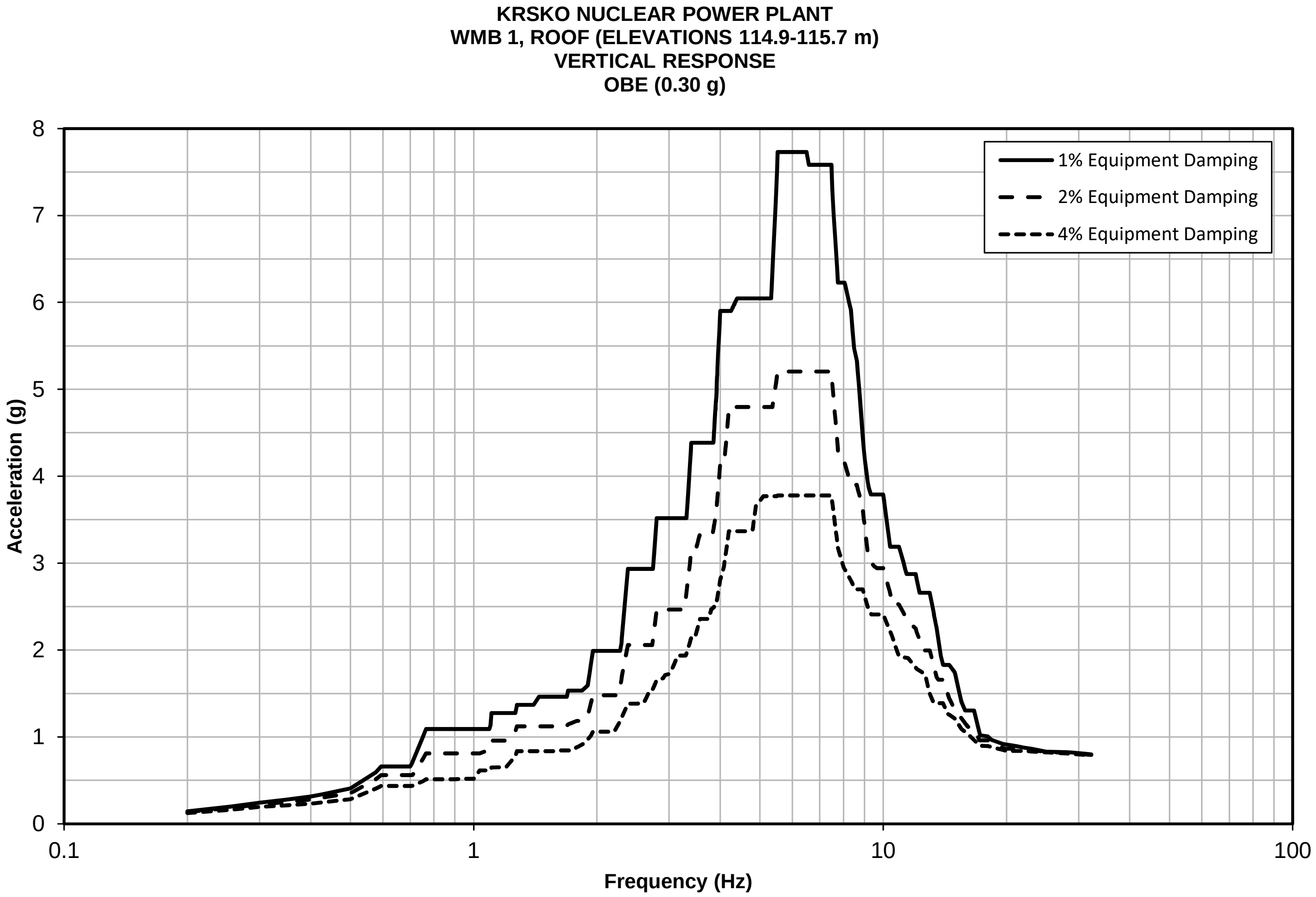

KRSKO NUCLEAR POWER PLANT
WMB 1, 1ST FLOOR (ELEVATION 109.9 m)
EAST-WEST RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
2
4
6
8
10
12
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, 1ST FLOOR (ELEVATION 109.9 m)
NORTH-SOUTH RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
9
10
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, 1ST FLOOR (ELEVATION 109.9 m)
VERTICAL RESPONSE
SSE (0.60 g)
Acceleration (g)
0
2
4
6
8
10
12
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
EAST-WEST RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
9
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
NORTH-SOUTH RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
VERTICAL RESPONSE
OBE (0.30 g)
1% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0
1
2
3
4
5
6
7
8
0.1
1
10
100
Frequency (Hz)

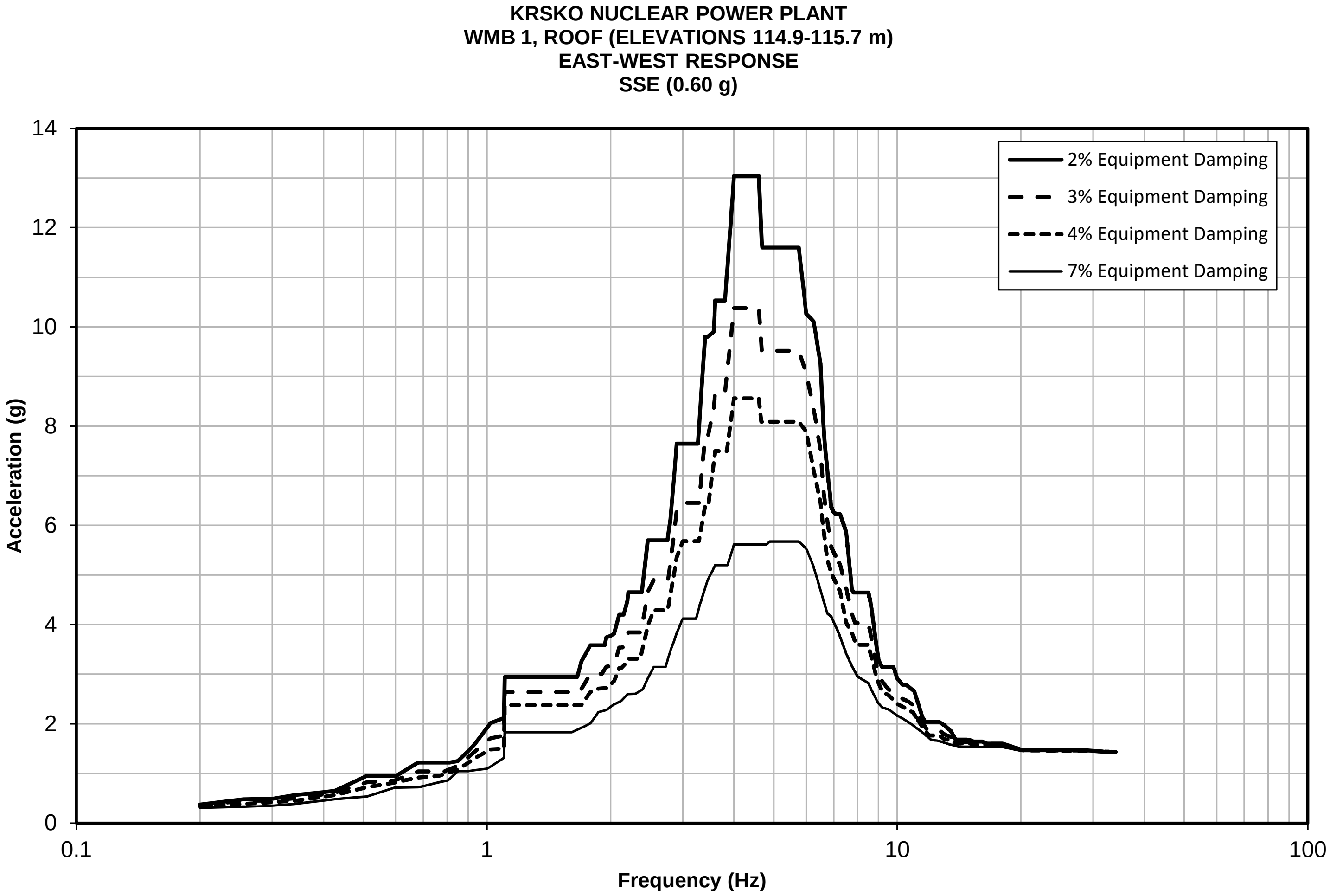
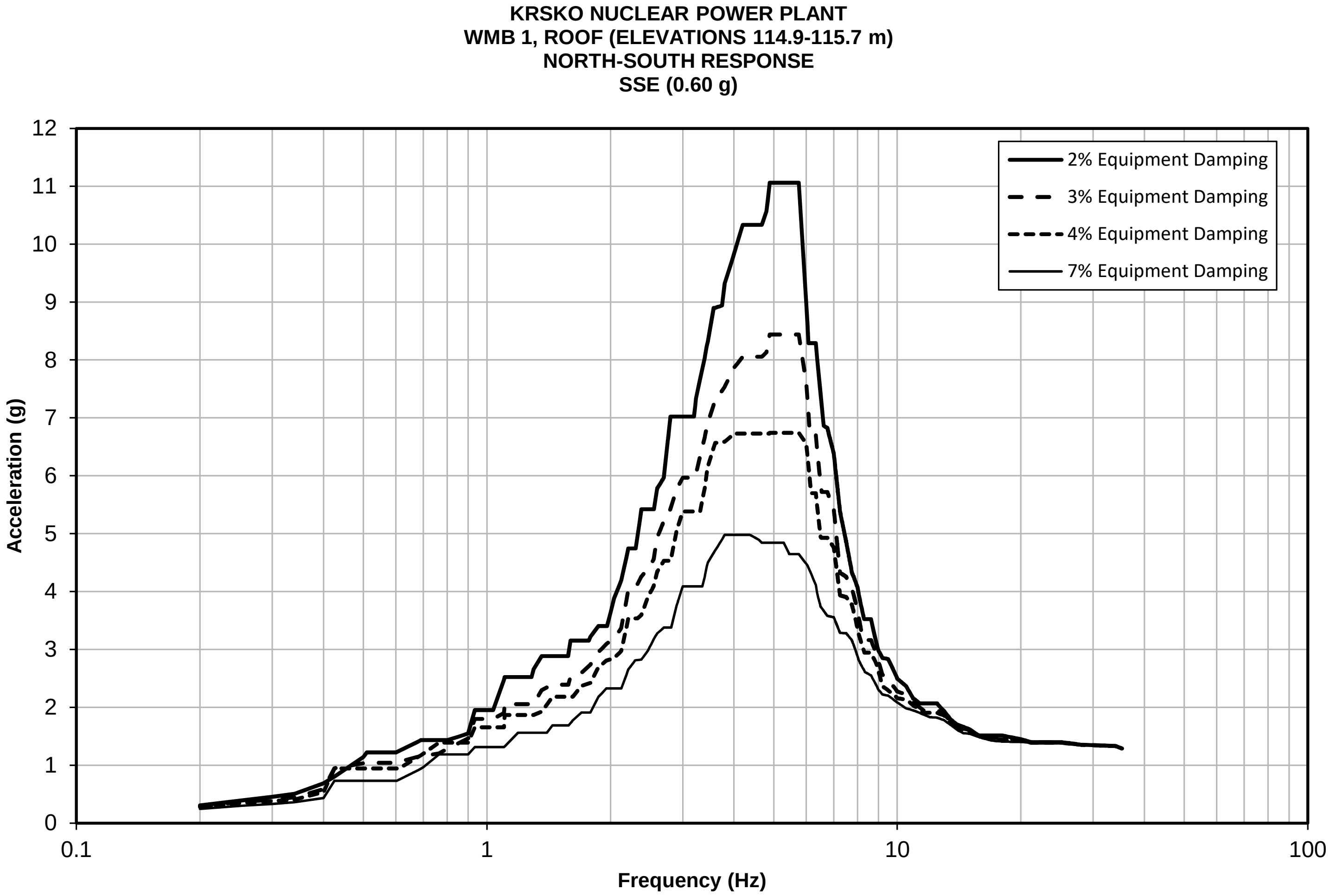

KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
EAST-WEST RESPONSE
SSE (0.60 g)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0
2
4
6
8
10
12
14
0.1
1
10
100

Figure D28


KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
NORTH-SOUTH RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
1
2
3
4
5
6
7
8
9
10
11
12
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

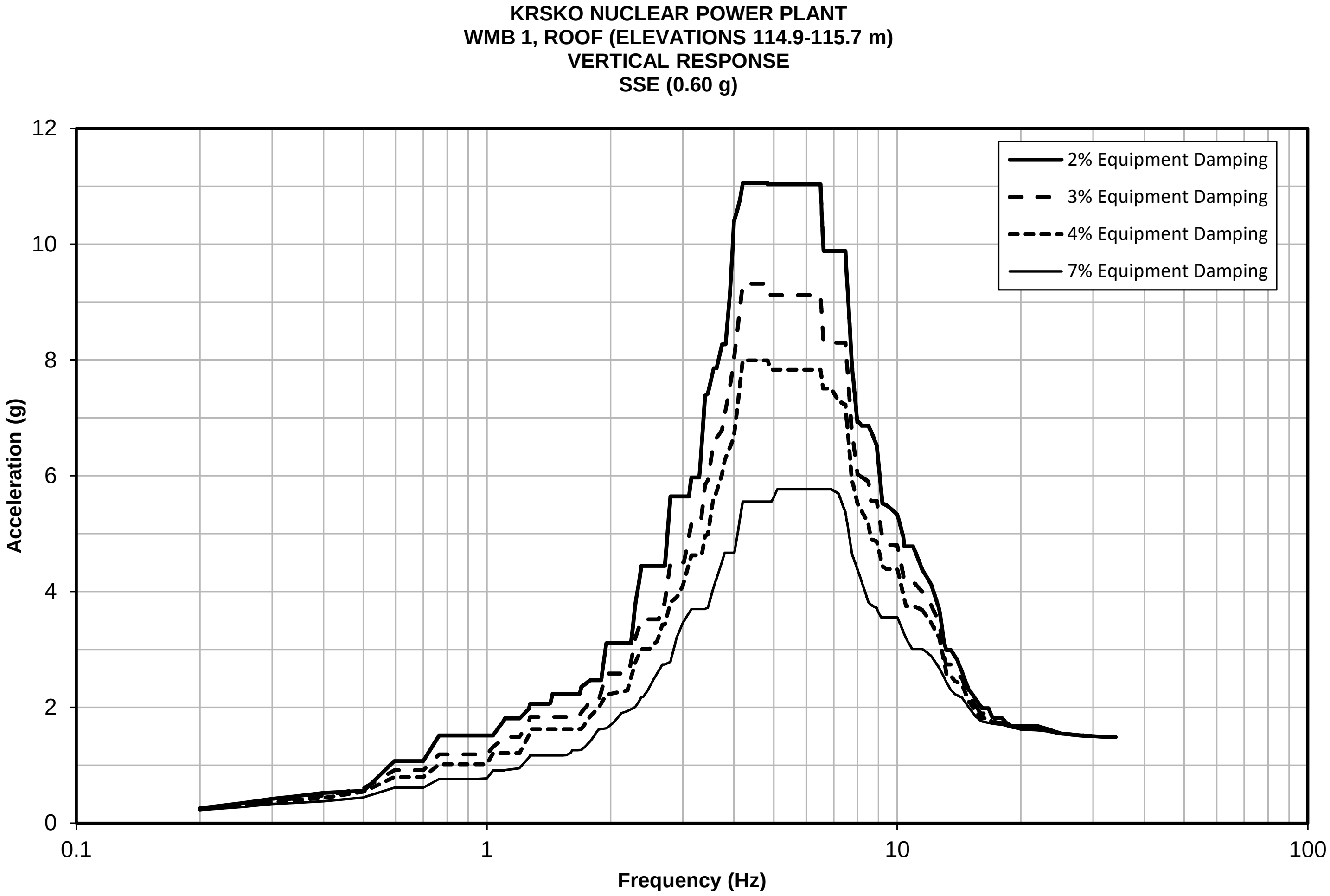

KRSKO NUCLEAR POWER PLANT
WMB 1, ROOF (ELEVATIONS 114.9-115.7 m)
VERTICAL RESPONSE
SSE (0.60 g)
Acceleration (g)
Frequency (Hz)
0
2
4
6
8
10
12
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure D30

APPENDIX E

TO

SP-S702-044687-000

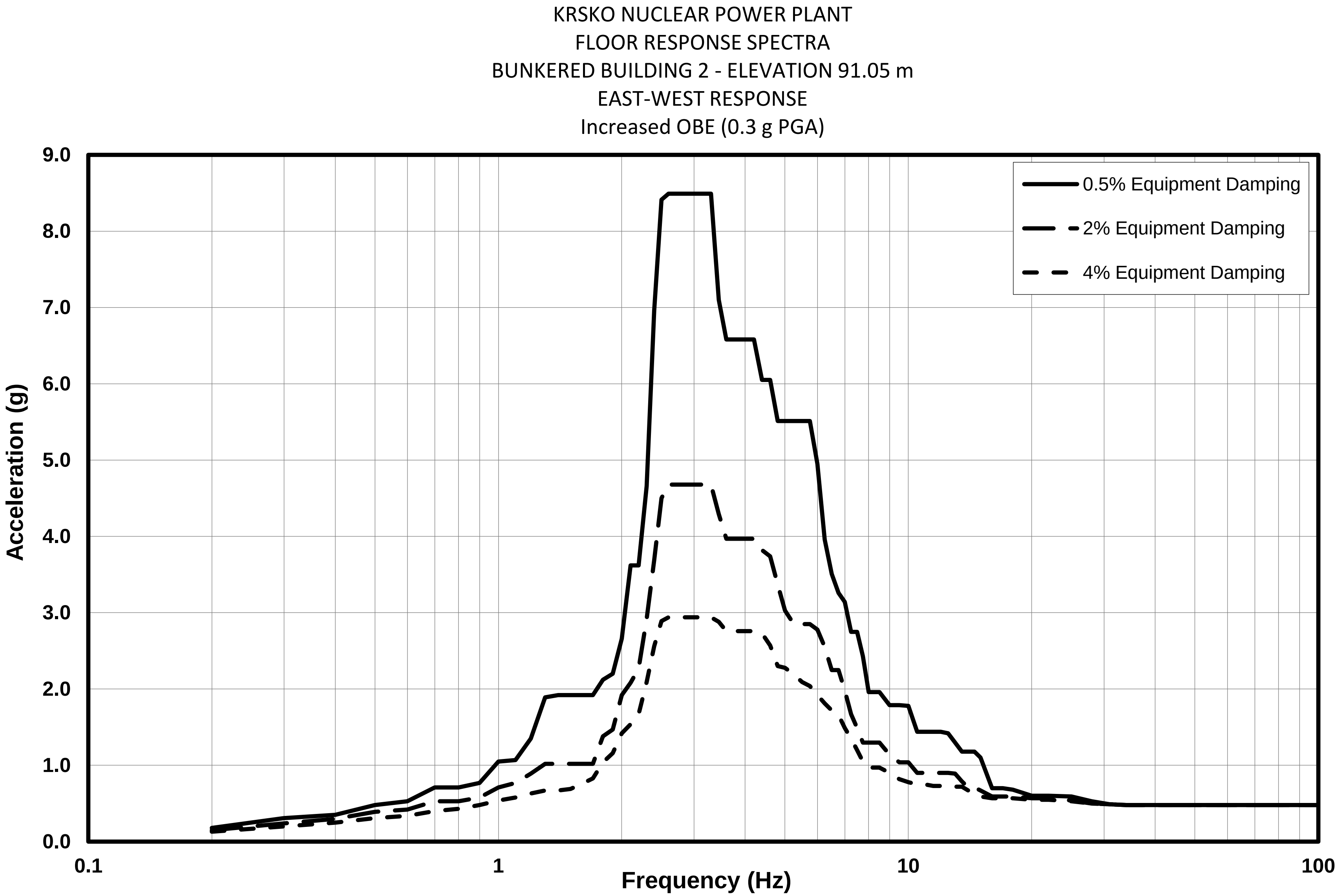
FLOOR RESPONSE SPECTRA CURVES
FOR
SSC’s IN THE BUNKERED BUILDING 2
FOR
Increased OPERATING BASIS EARTHQUAKE, DEC SAFE-SHUTDOWN EARTHQUAKE, Increased DEC SAFE-SHUTDOWN EARTHQUAKE

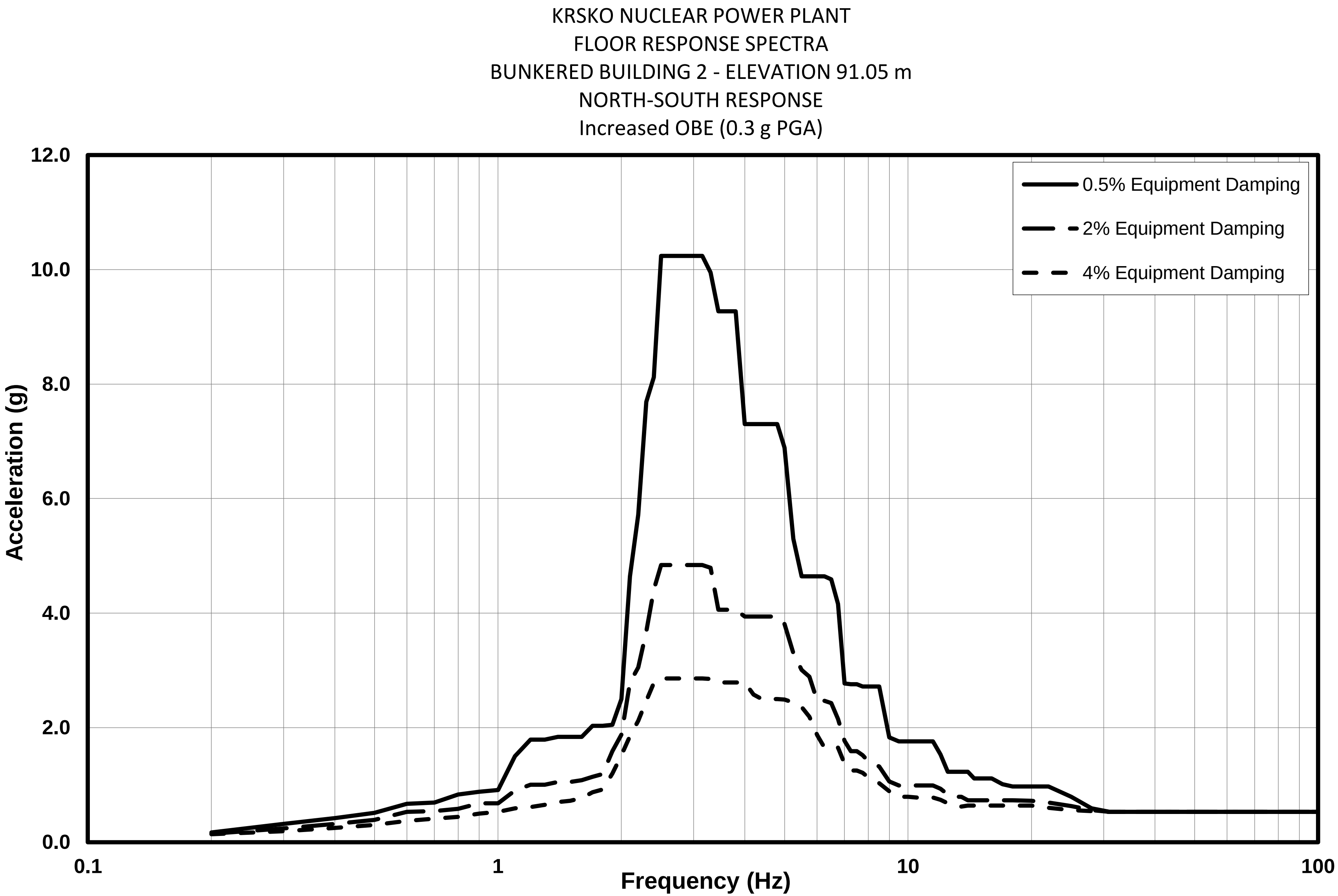
KRSKO NUCLEAR POWER PLANT
KRSKO, SLOVENIA

Floor Response Spectra Figure Matrix
for
Bunkered Building 2

Elevation	PGA Level	FRS Figure #		
		East-West	North-South	Vertical
El. 91.050 m	Increased OBE (0.3 g)	E1	E2	E3
	DEC (0.6 g)	E4	E5	E6
	Increased DEC (0.78 g)	E7	E8	E9
El. 96.800 m	Increased OBE (0.3 g)	E10	E11	E12
	DEC (0.6 g)	E13	E14	E15
	Increased DEC (0.78 g)	E16	E17	E18
El. 102.55 m	Increased OBE (0.3 g)	E19	E20	E21
	DEC (0.6 g)	E22	E23	E24
	Increased DEC (0.78 g)	E25	E26	E27
El. 108.85 m	Increased OBE (0.3 g)	E28	E29	E30
	DEC (0.6 g)	E31	E32	E33
	Increased DEC (0.78 g)	E34	E35	E36

Note: Appendix E is presenting BB2 elevations in the plant grade elev. 100 m system, while design report for the BB2 has FRS in actual Elevation system. The plant grade elevation of 91.05 m corresponds to actual elevation of 146.10 m.


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
EAST-WEST RESPONSE
Increased OBE (0.3 g PGA)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.1
1
10
100
Frequency (Hz)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
NORTH-SOUTH RESPONSE
Increased OBE (0.3 g PGA)
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping

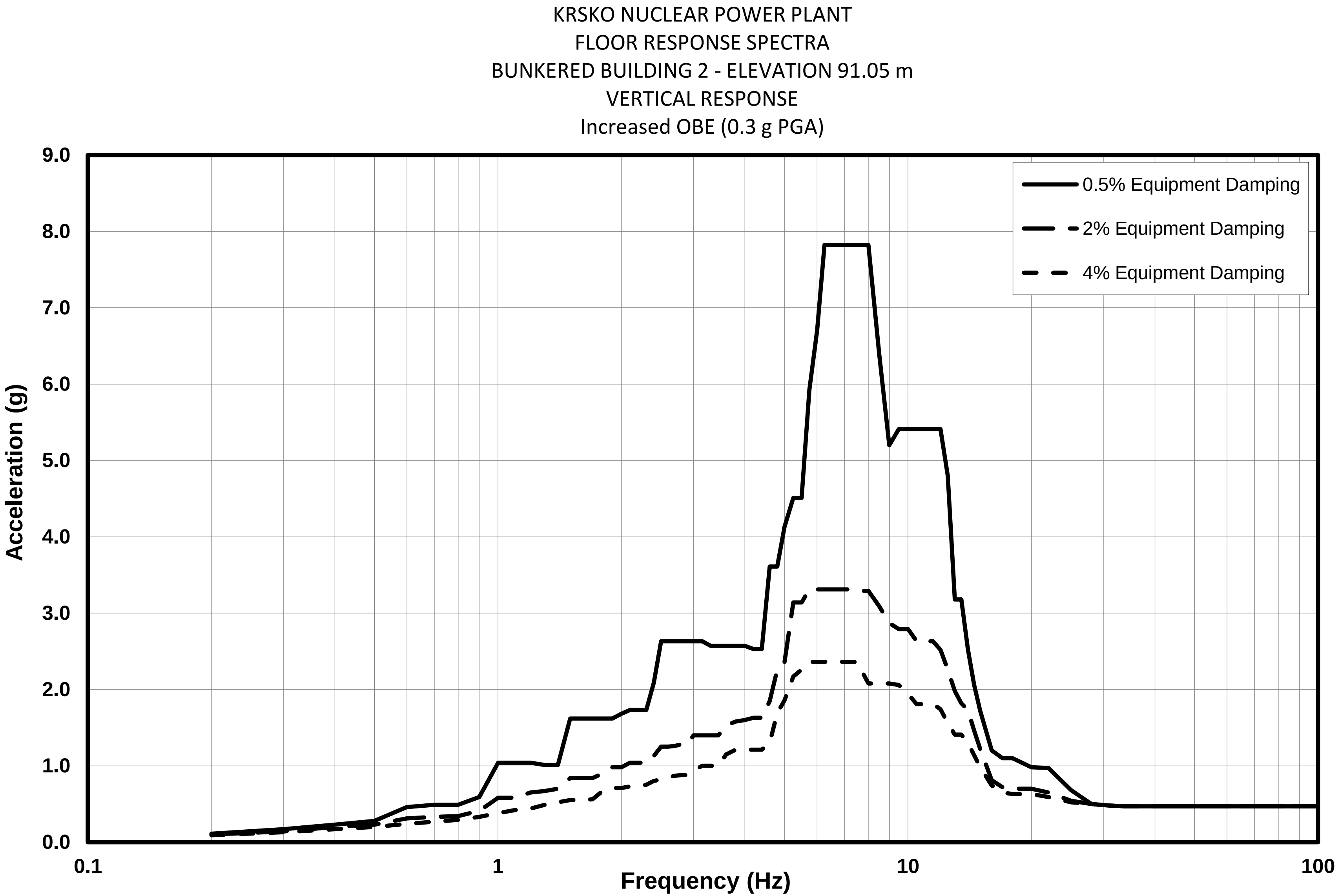

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
VERTICAL RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Frequency (Hz)
0.1
1
10
100

Figure E3

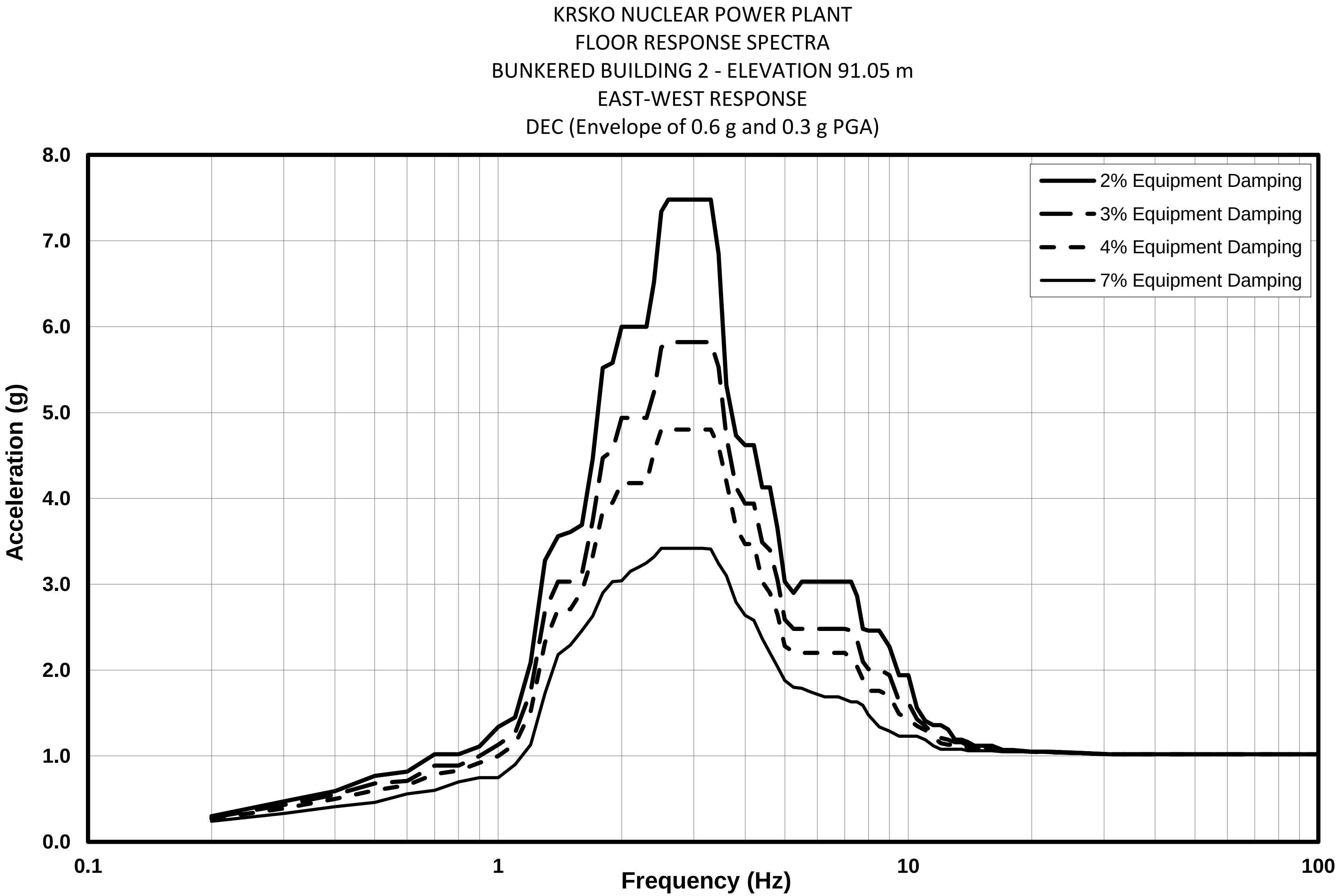

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
EAST-WEST RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E4

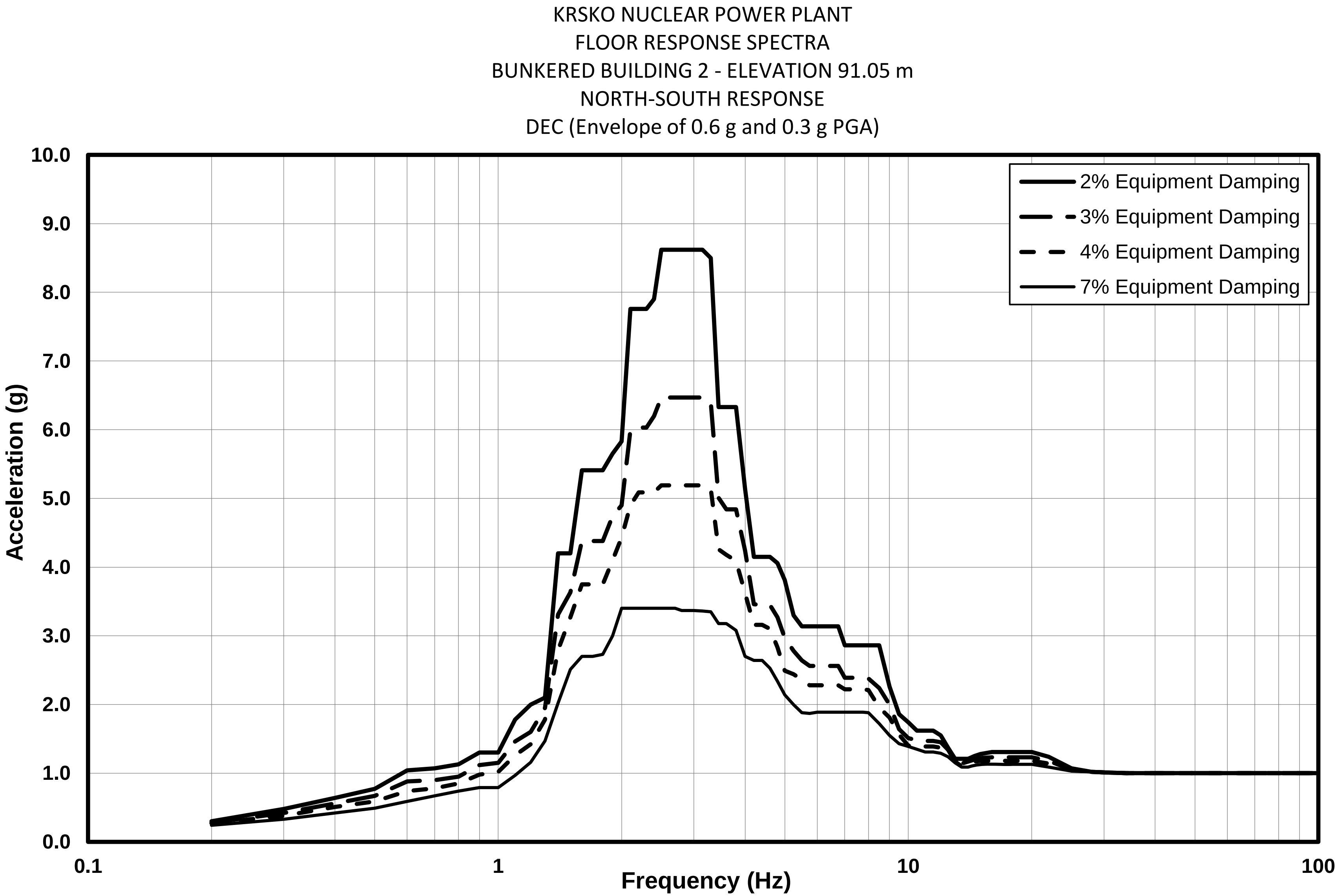

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
NORTH-SOUTH RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure E5

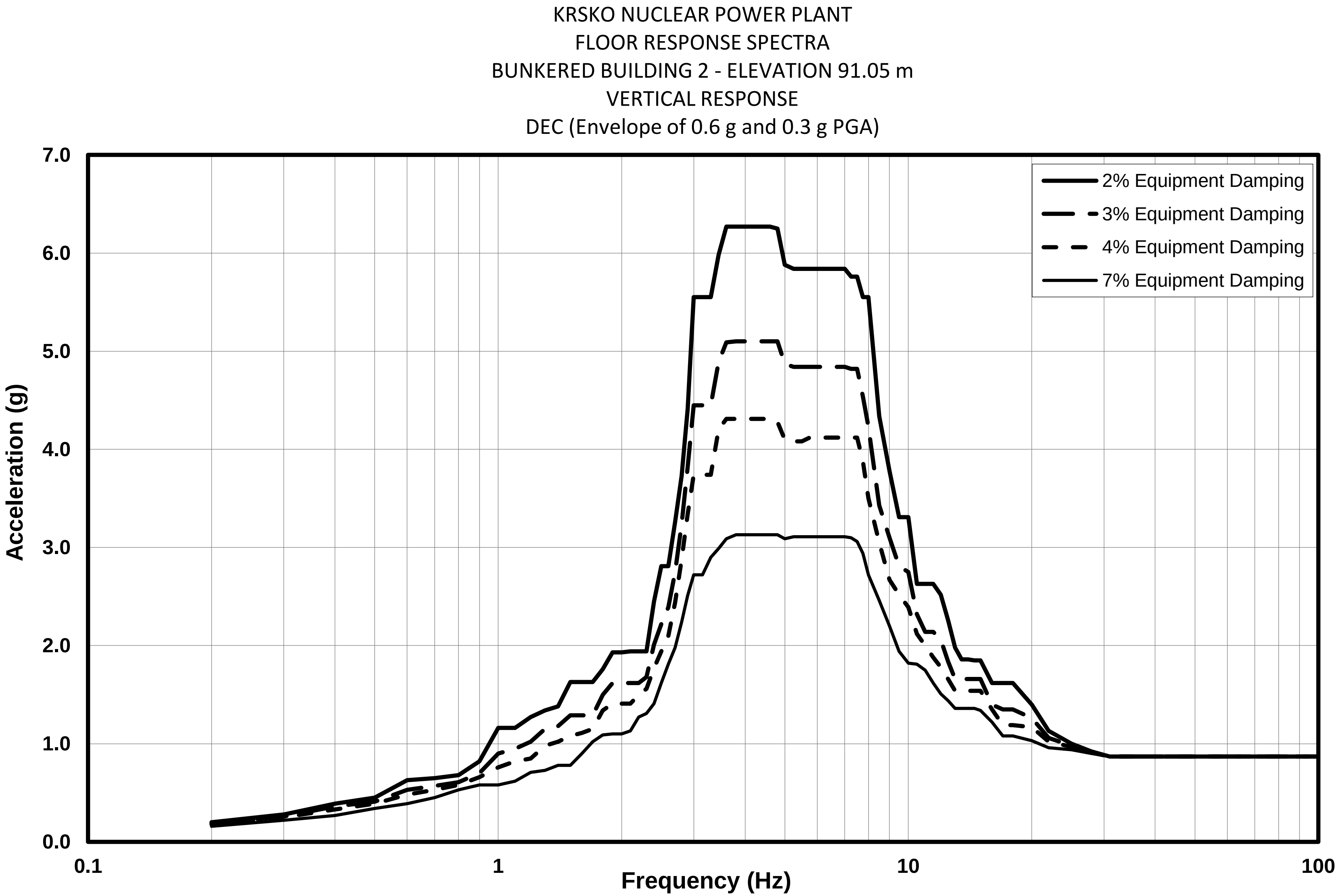
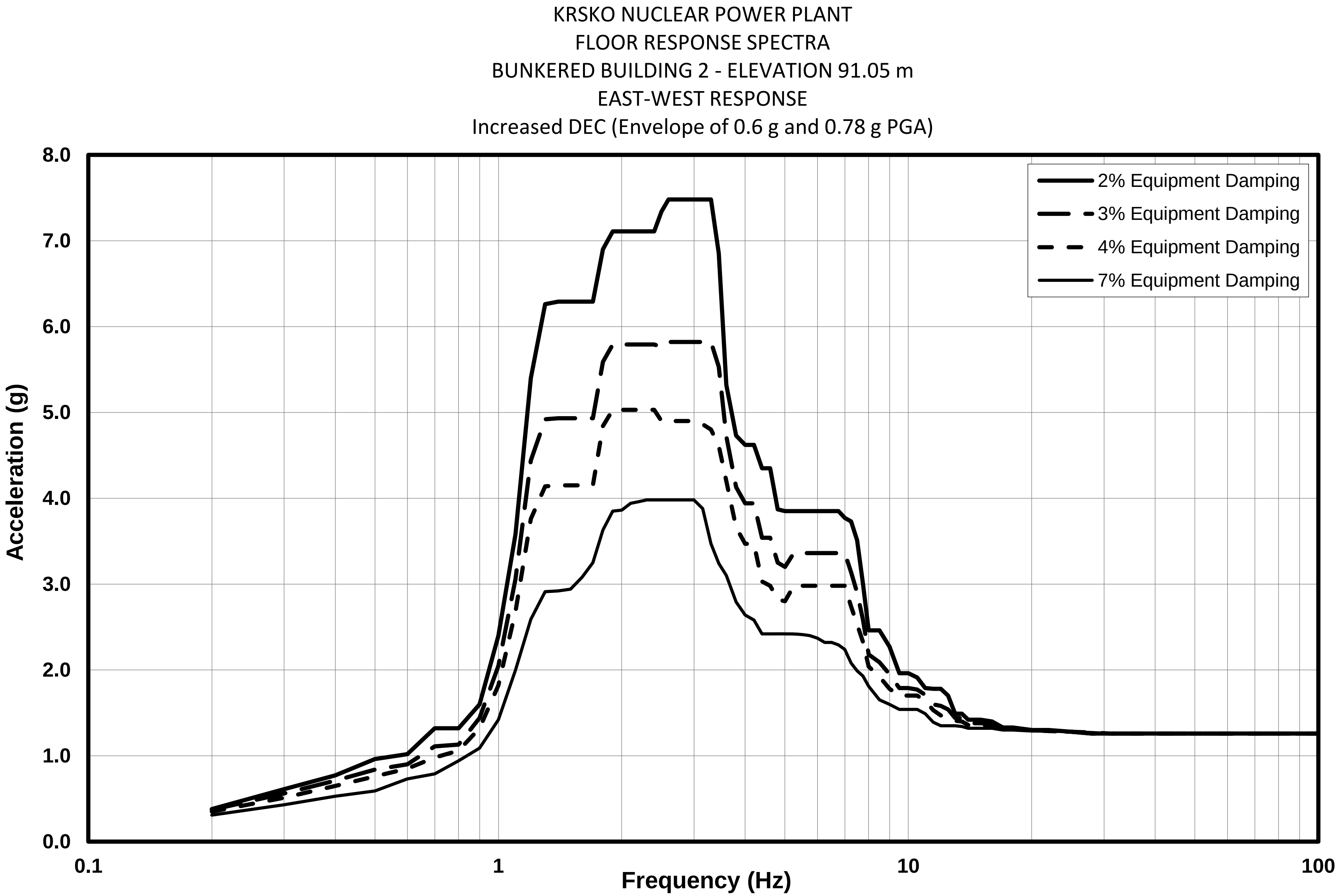

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
VERTICAL RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure E6


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
EAST-WEST RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100

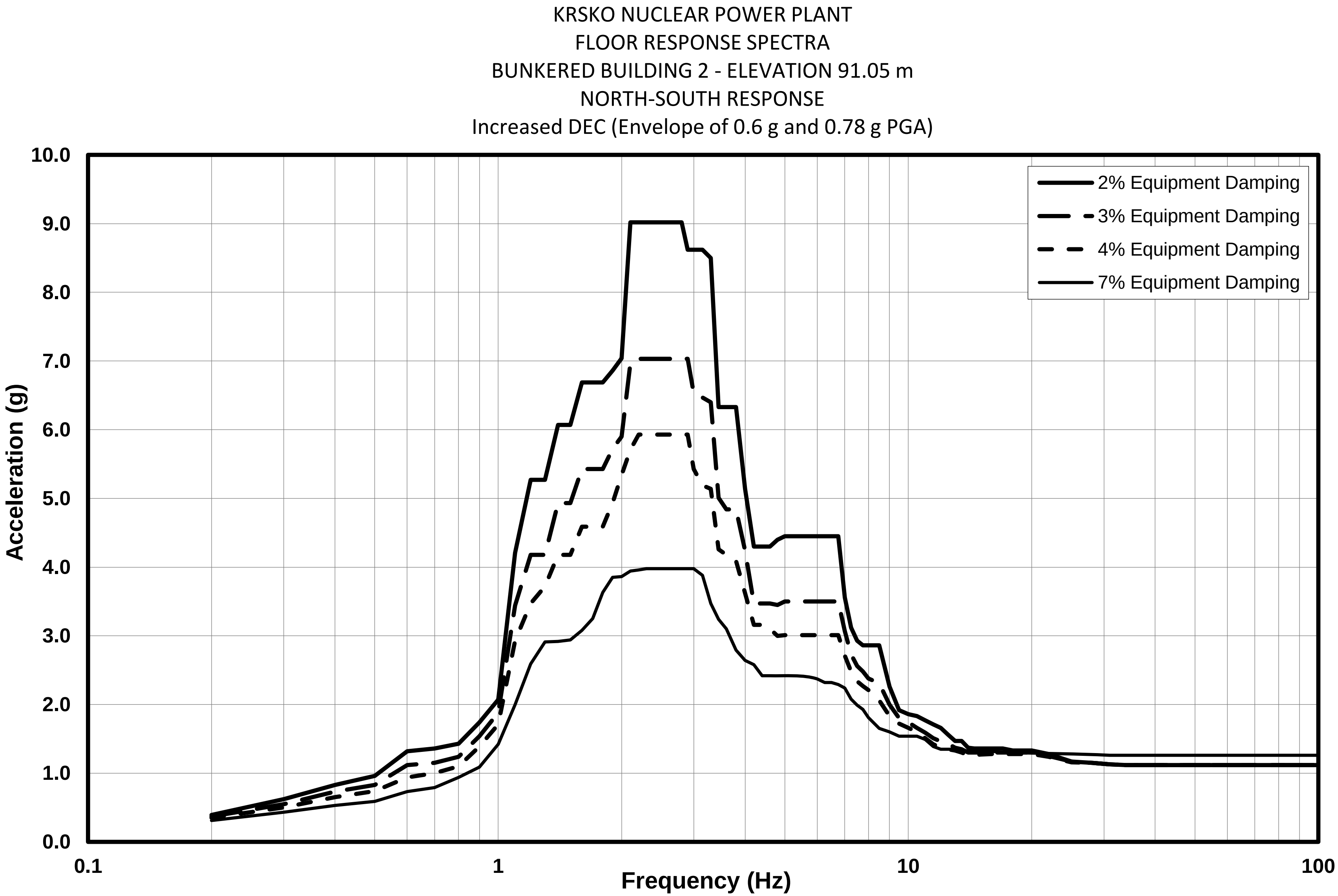
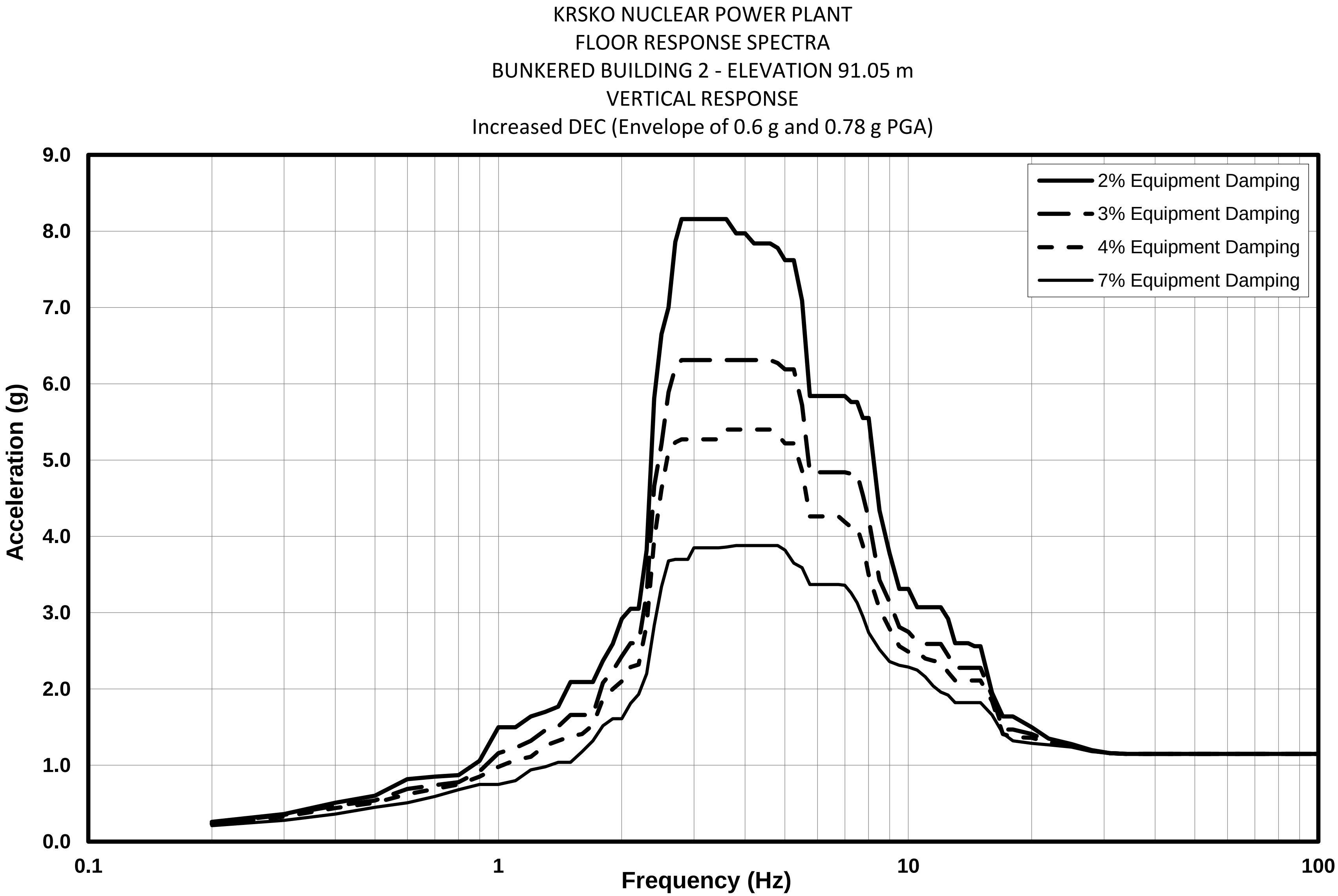
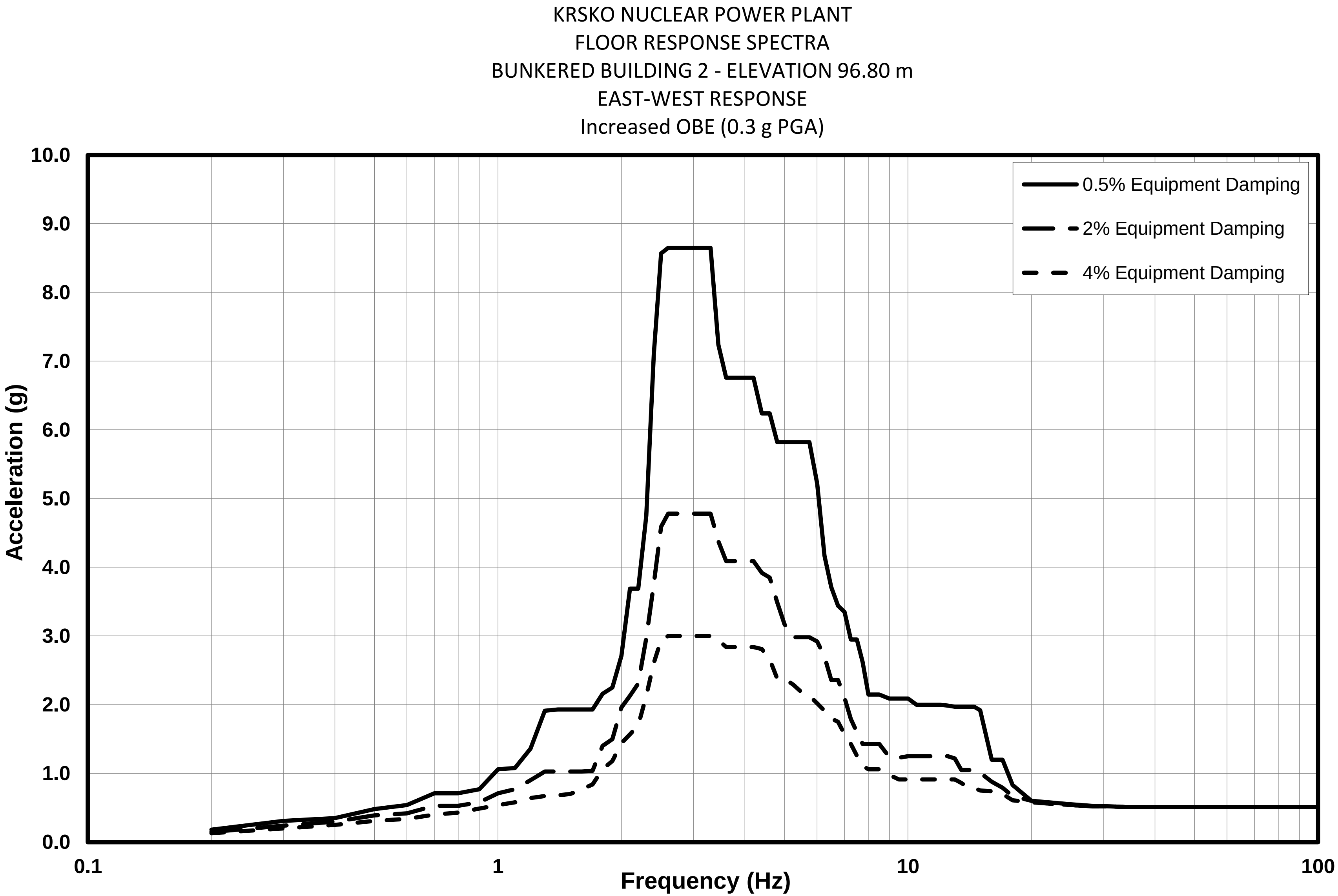

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
NORTH-SOUTH RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.1
1
10
100

Figure E8



KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 91.05 m
VERTICAL RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
EAST-WEST RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

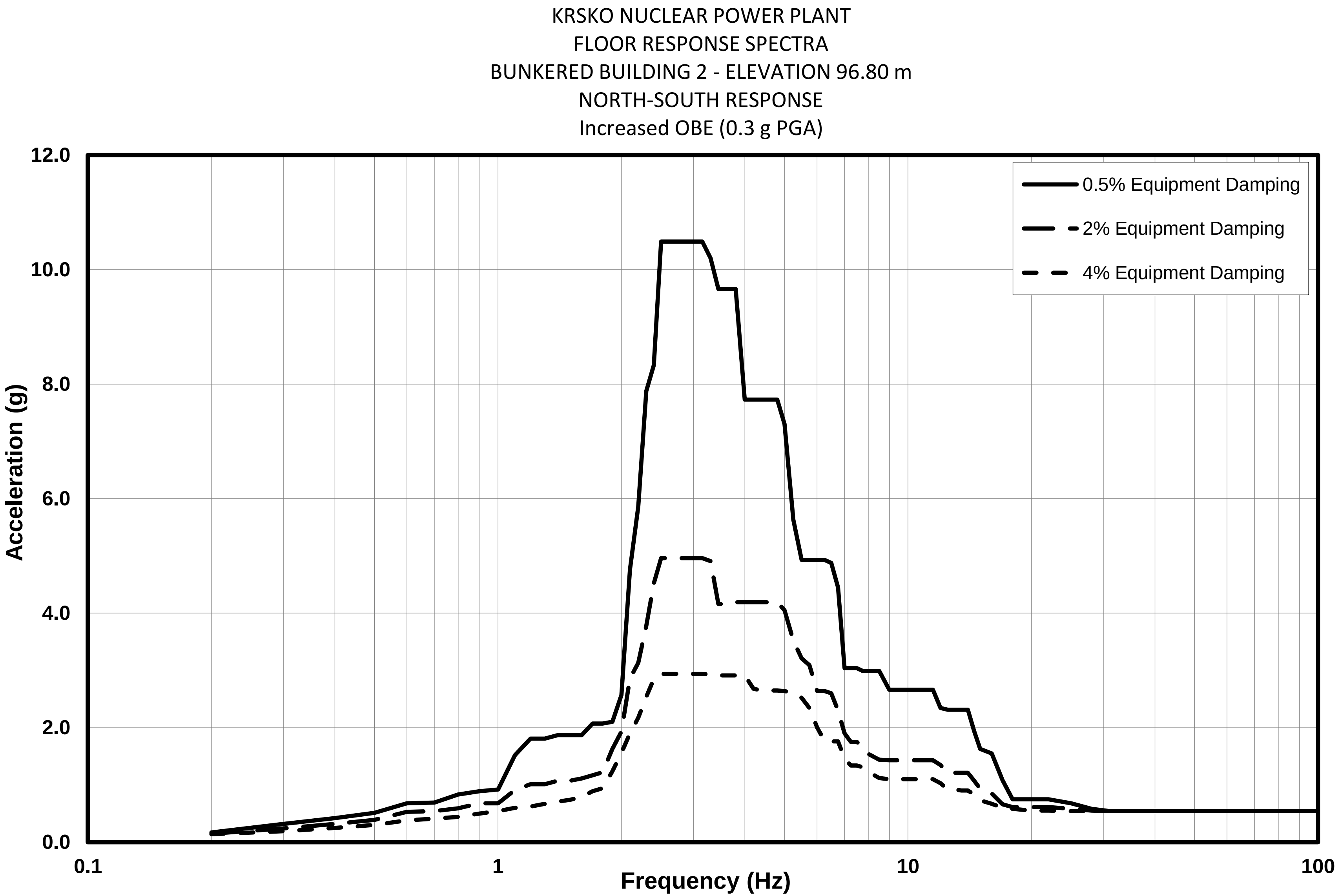
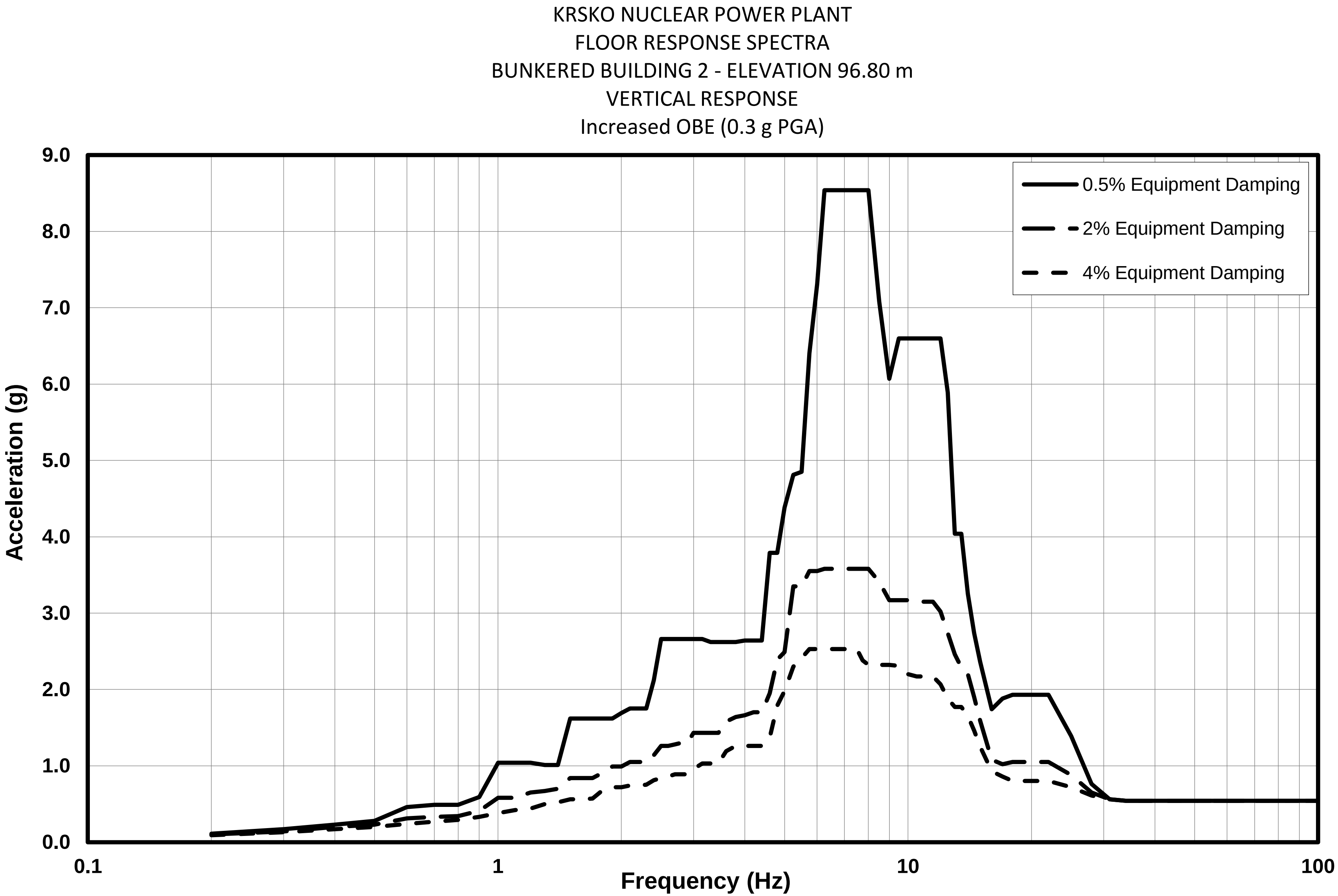

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
NORTH-SOUTH RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Frequency (Hz)
0.1
1
10
100

Figure E11


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
VERTICAL RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

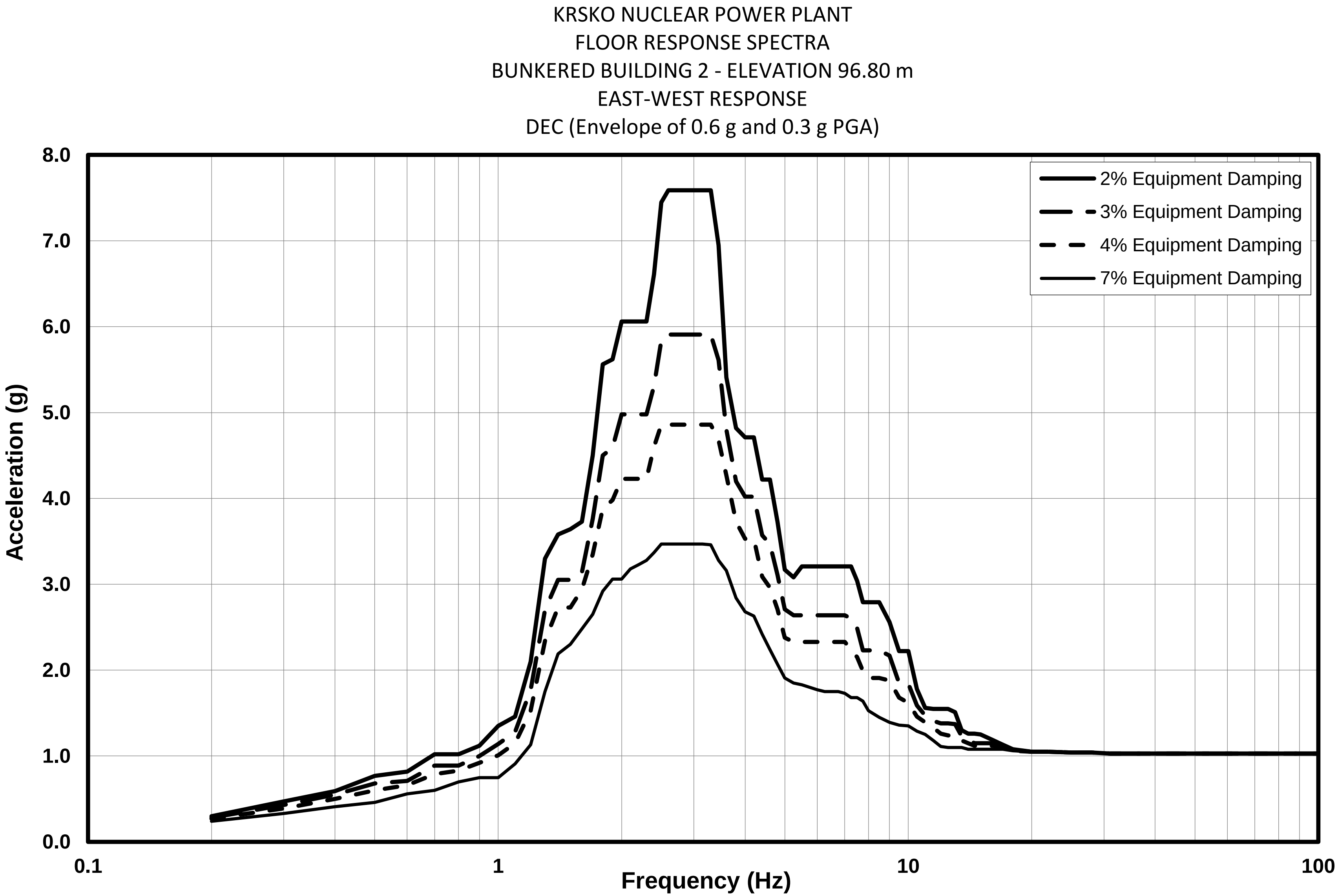

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
EAST-WEST RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure E13

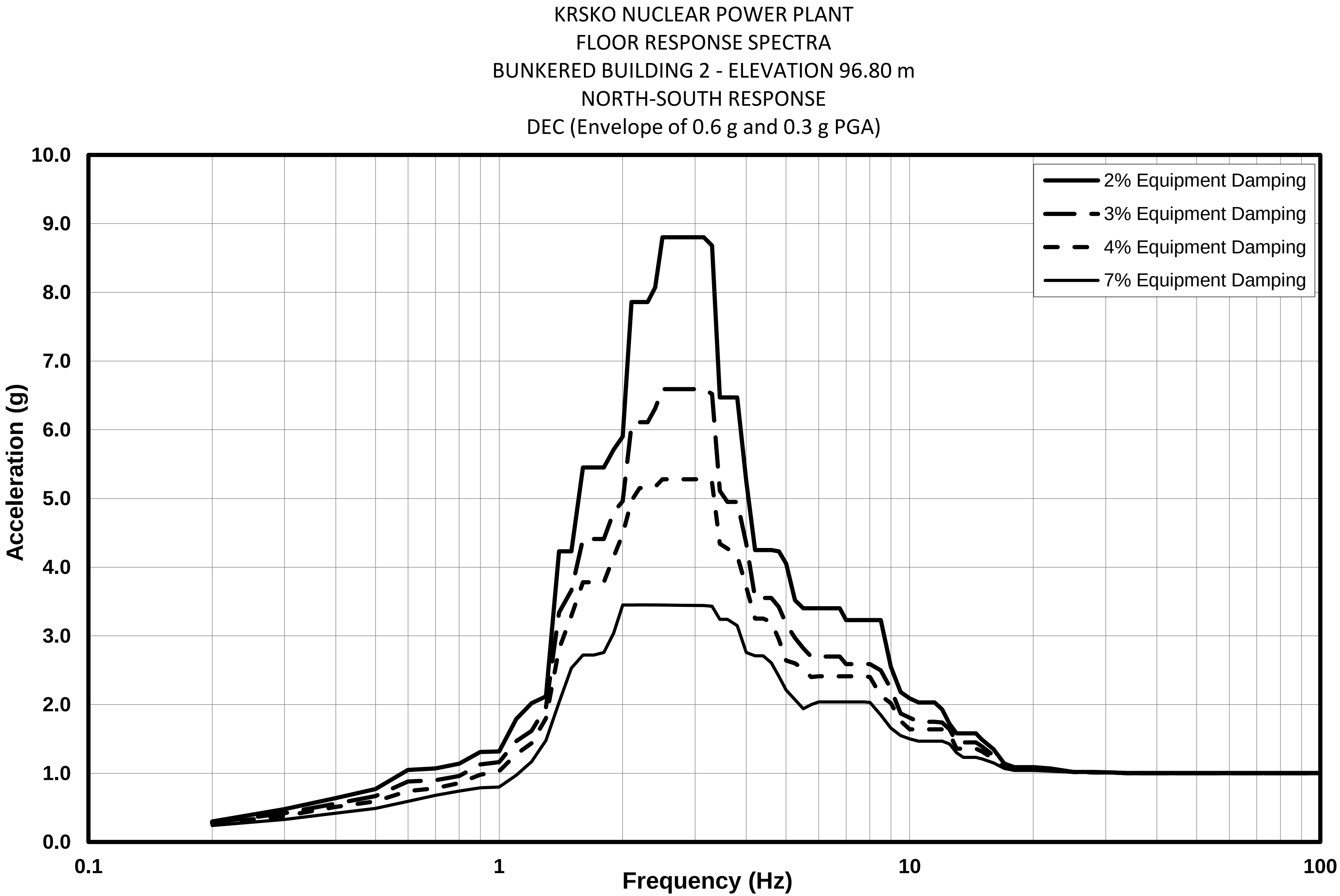
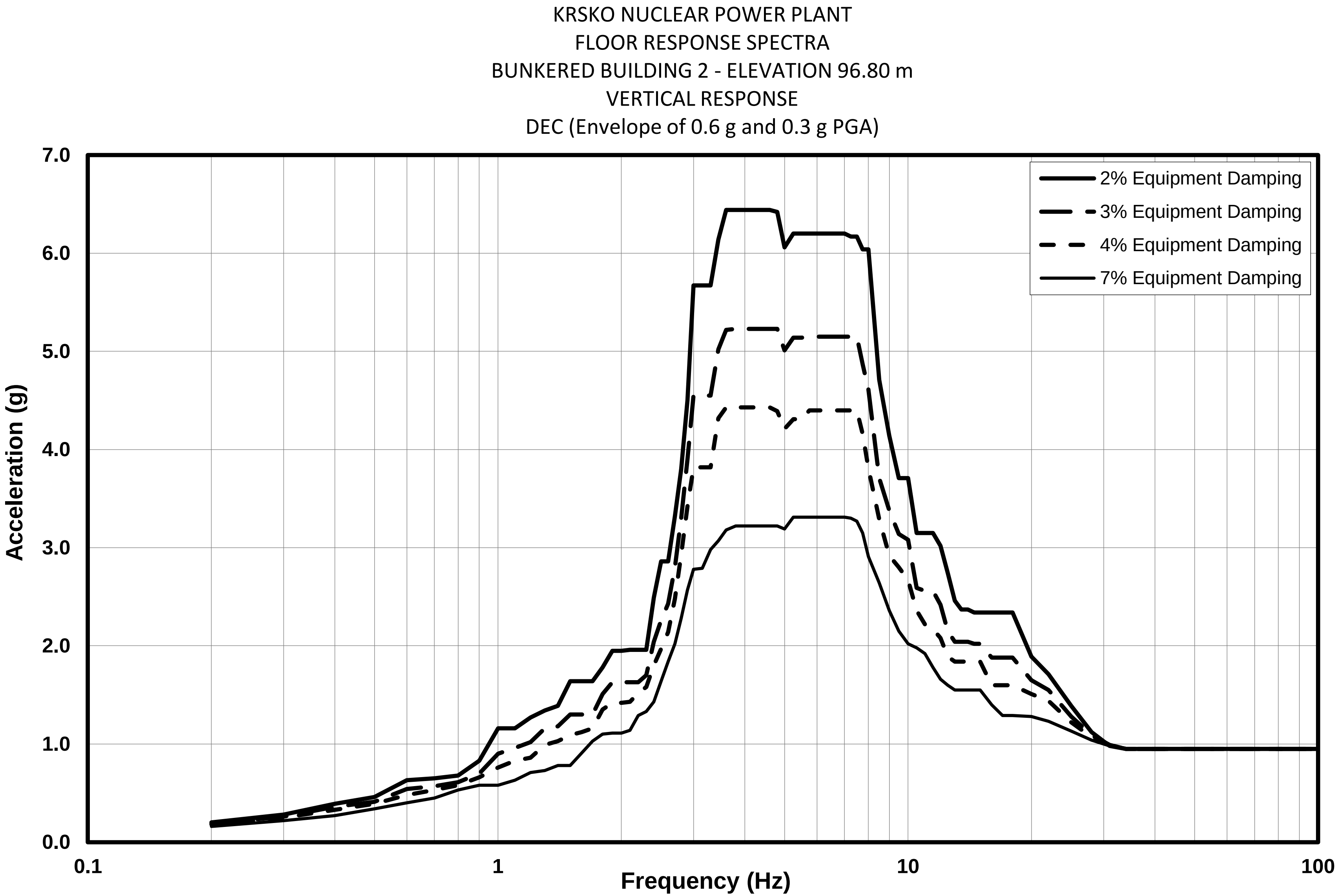
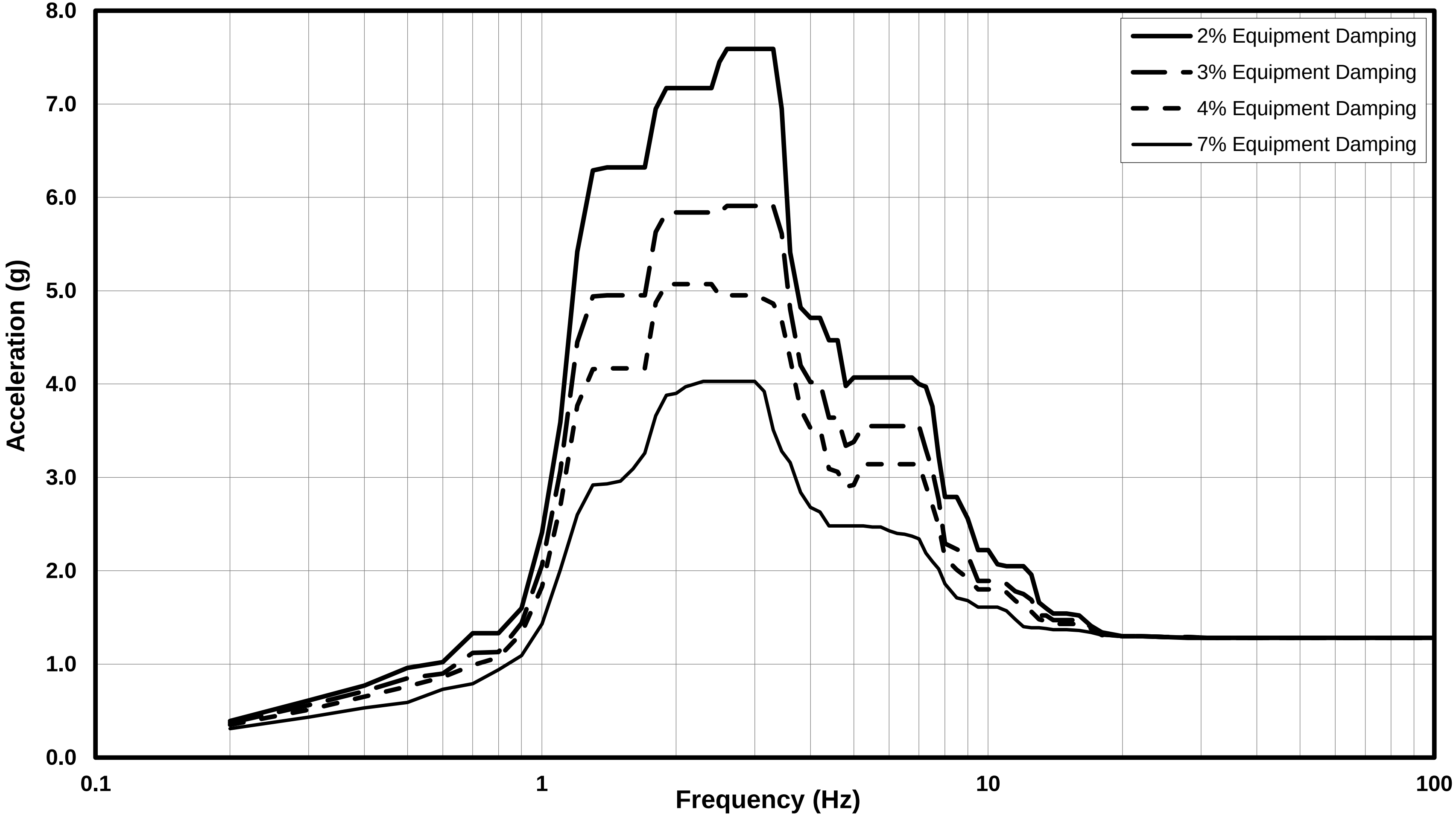
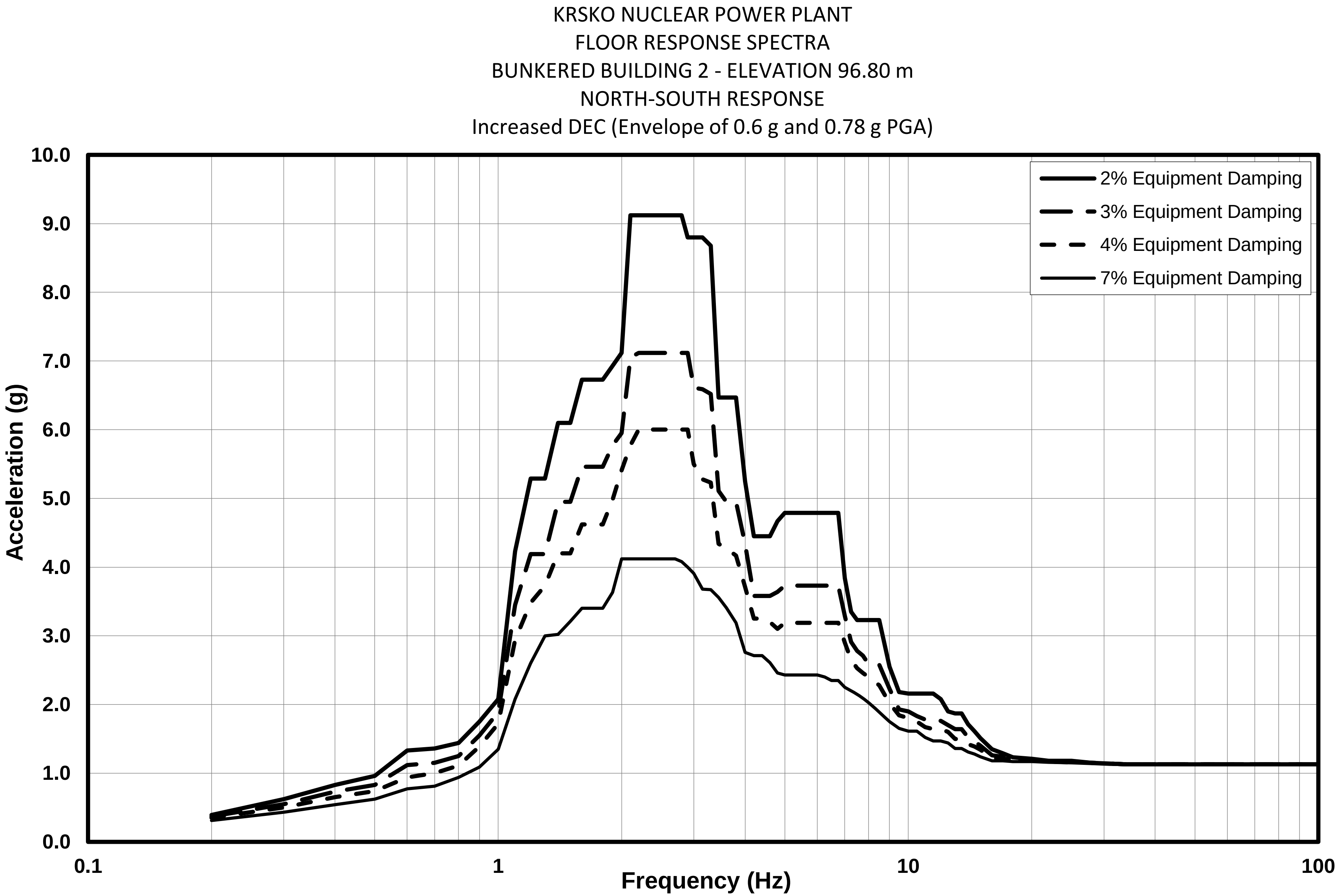

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
NORTH-SOUTH RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure E14


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
VERTICAL RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
EAST-WEST RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)





KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
NORTH-SOUTH RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
Acceleration (g)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
Frequency (Hz)
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

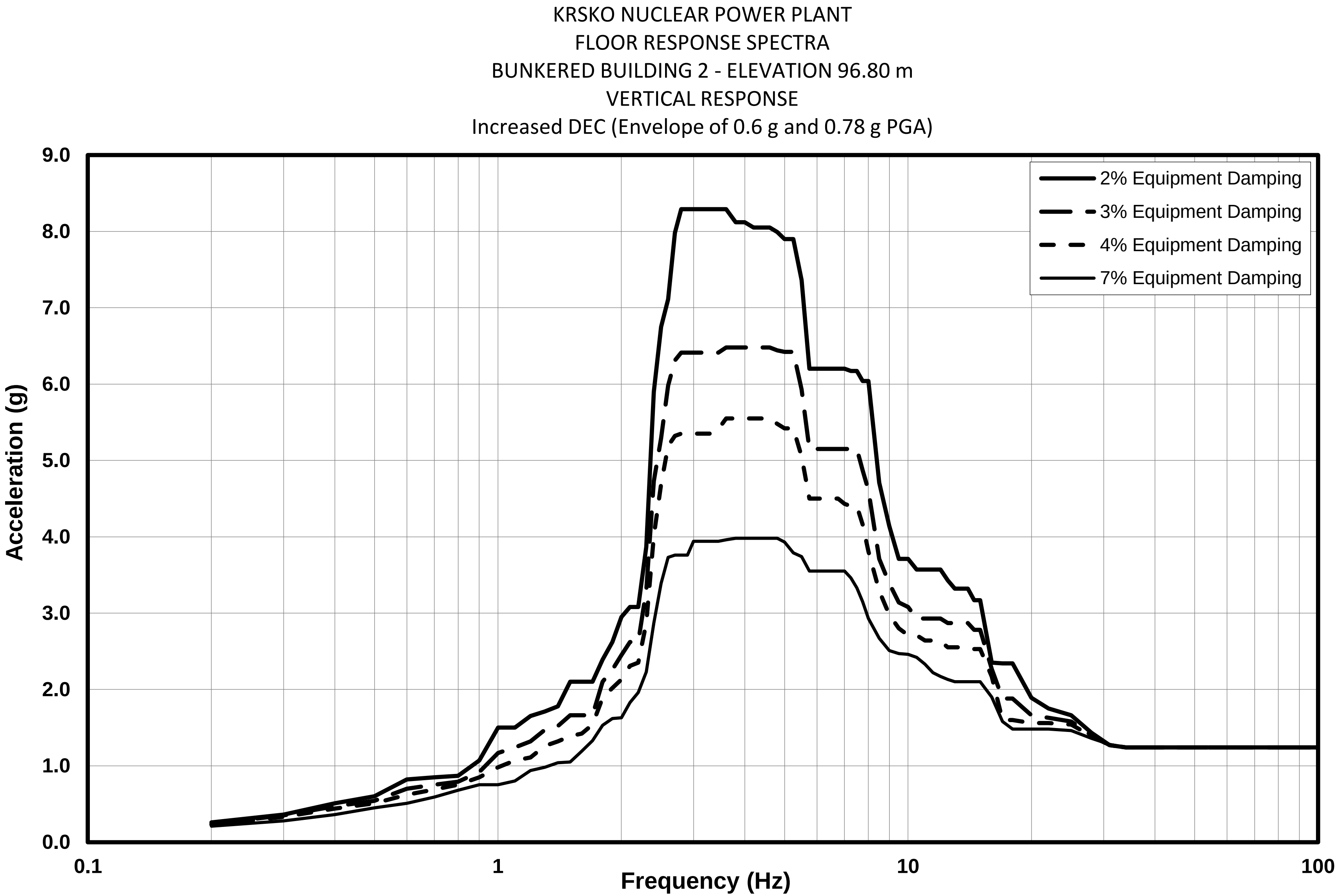

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 96.80 m
VERTICAL RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E18

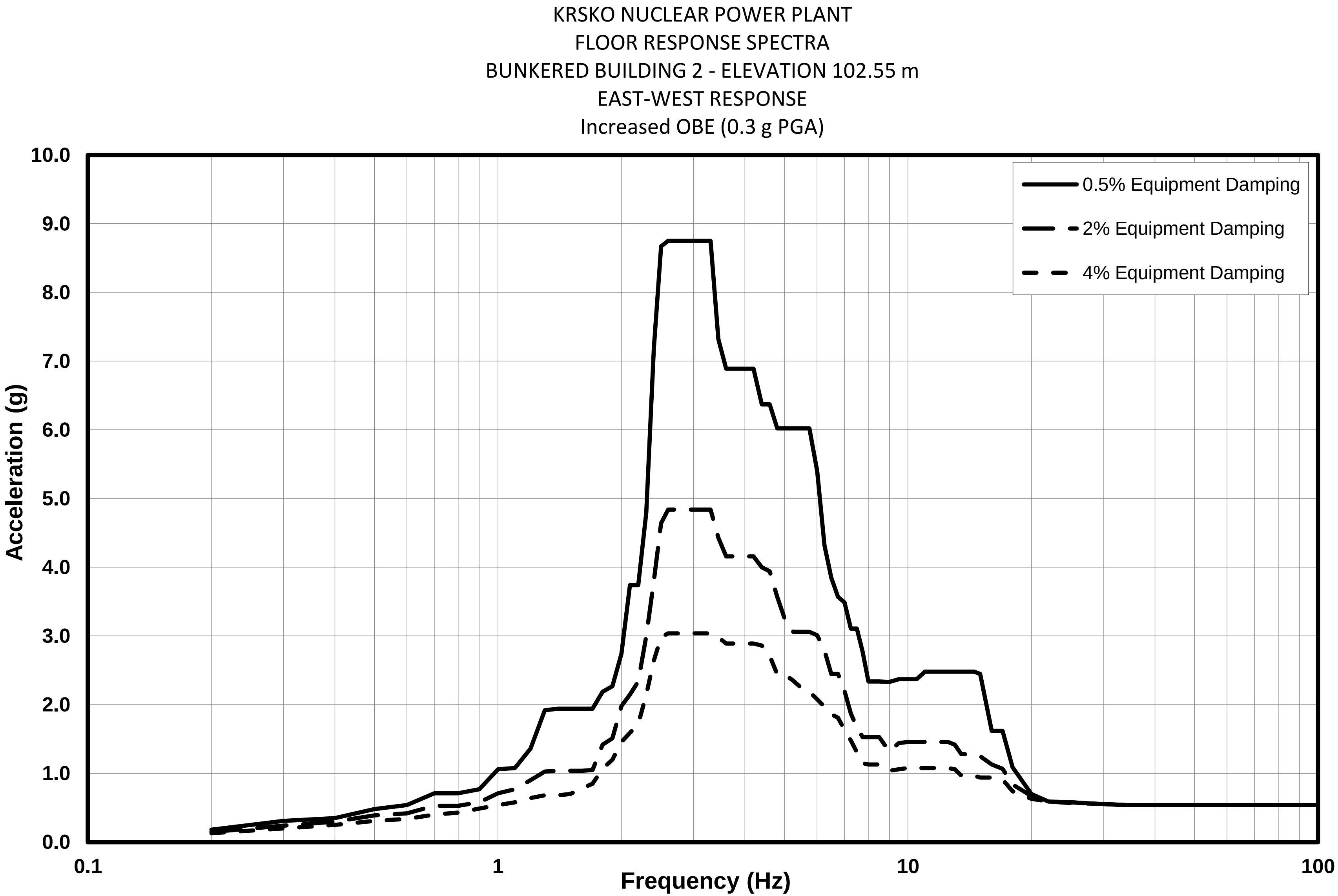

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
EAST-WEST RESPONSE
Increased OBE (0.3 g PGA)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Acceleration (g)
0.1
1
10
100
Frequency (Hz)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure E19

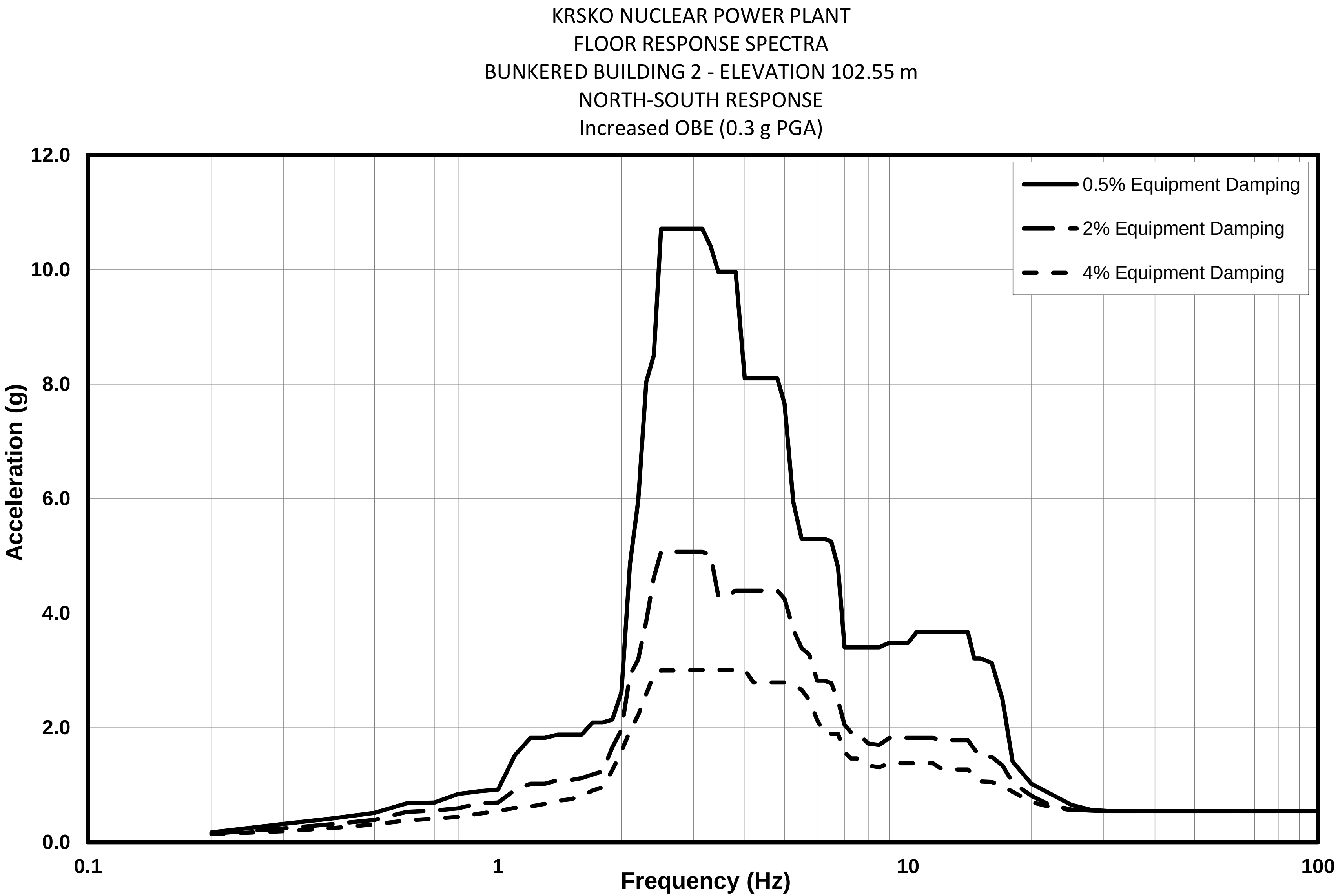

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
NORTH-SOUTH RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E20

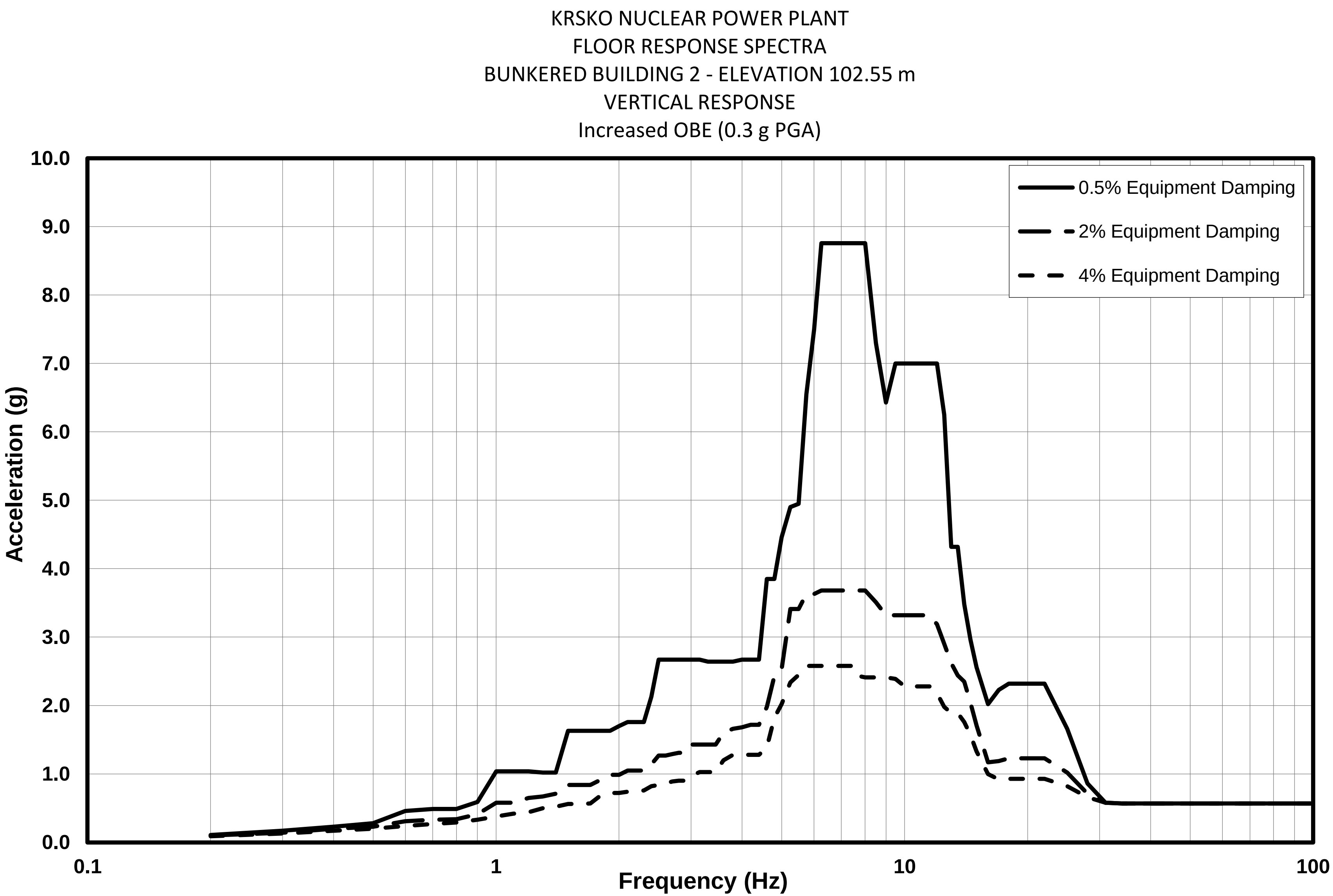
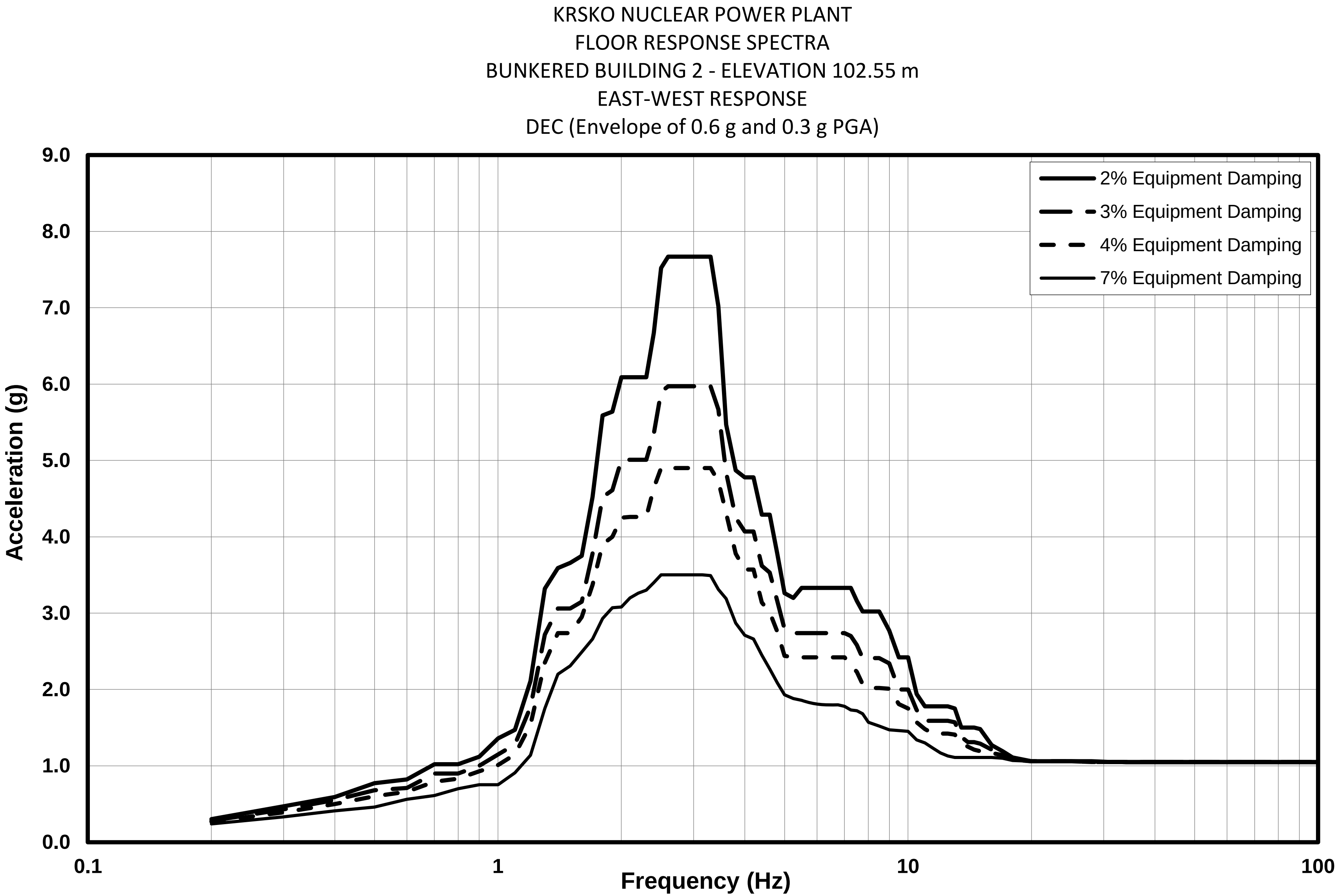

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
VERTICAL RESPONSE
Increased OBE (0.3 g PGA)
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure E21


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
EAST-WEST RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
NORTH-SOUTH RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)

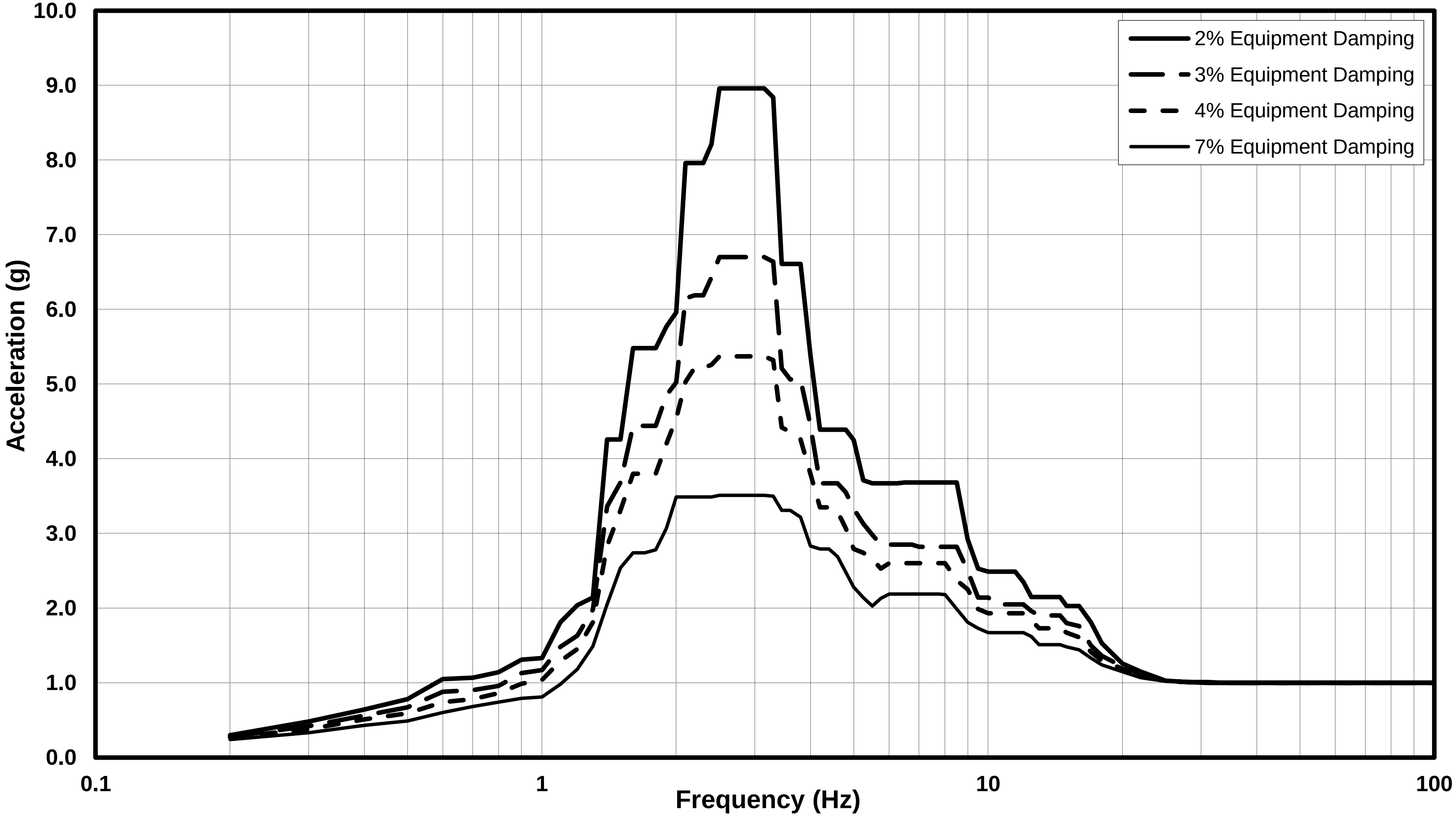
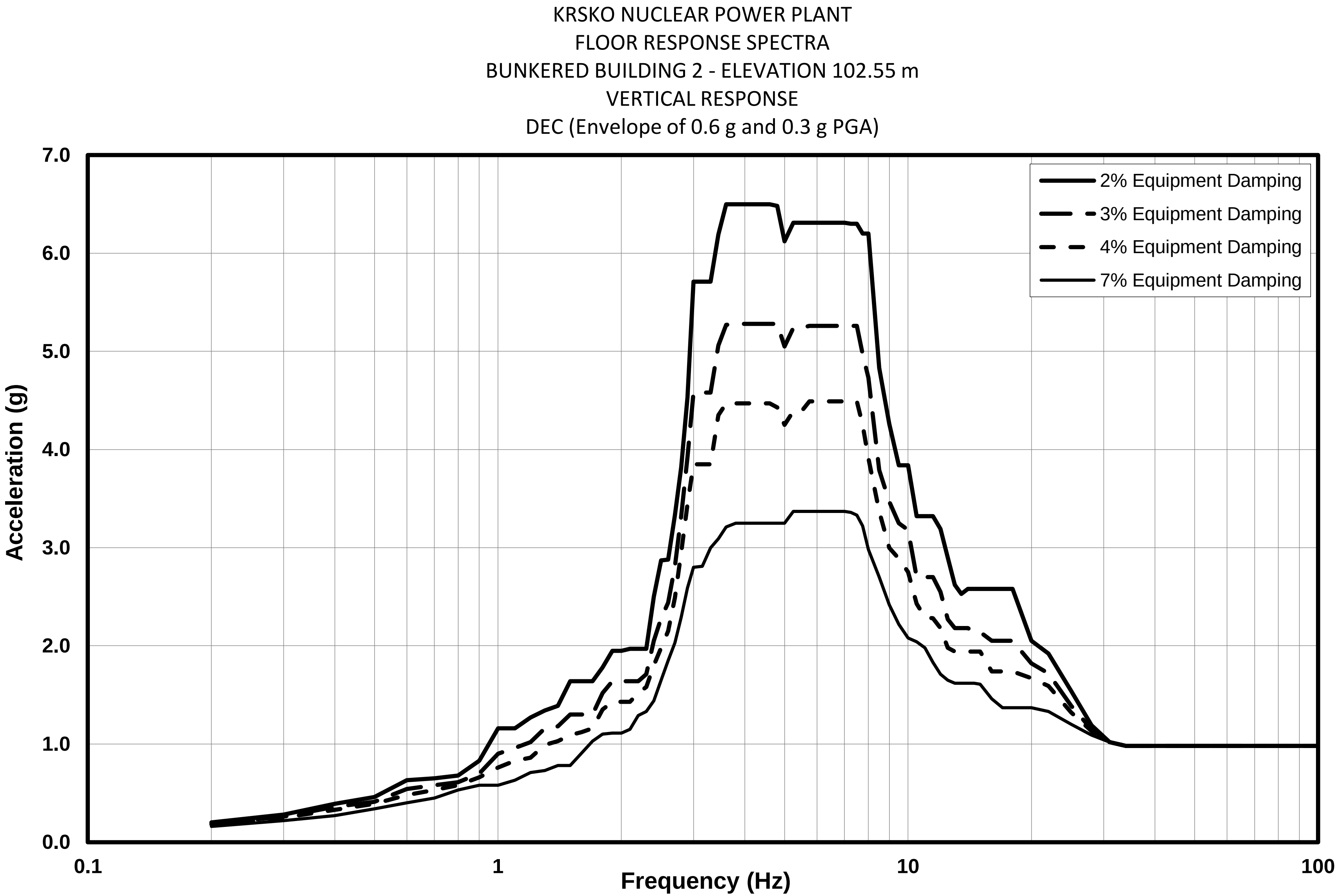


Figure E23


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
VERTICAL RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
Acceleration (g)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

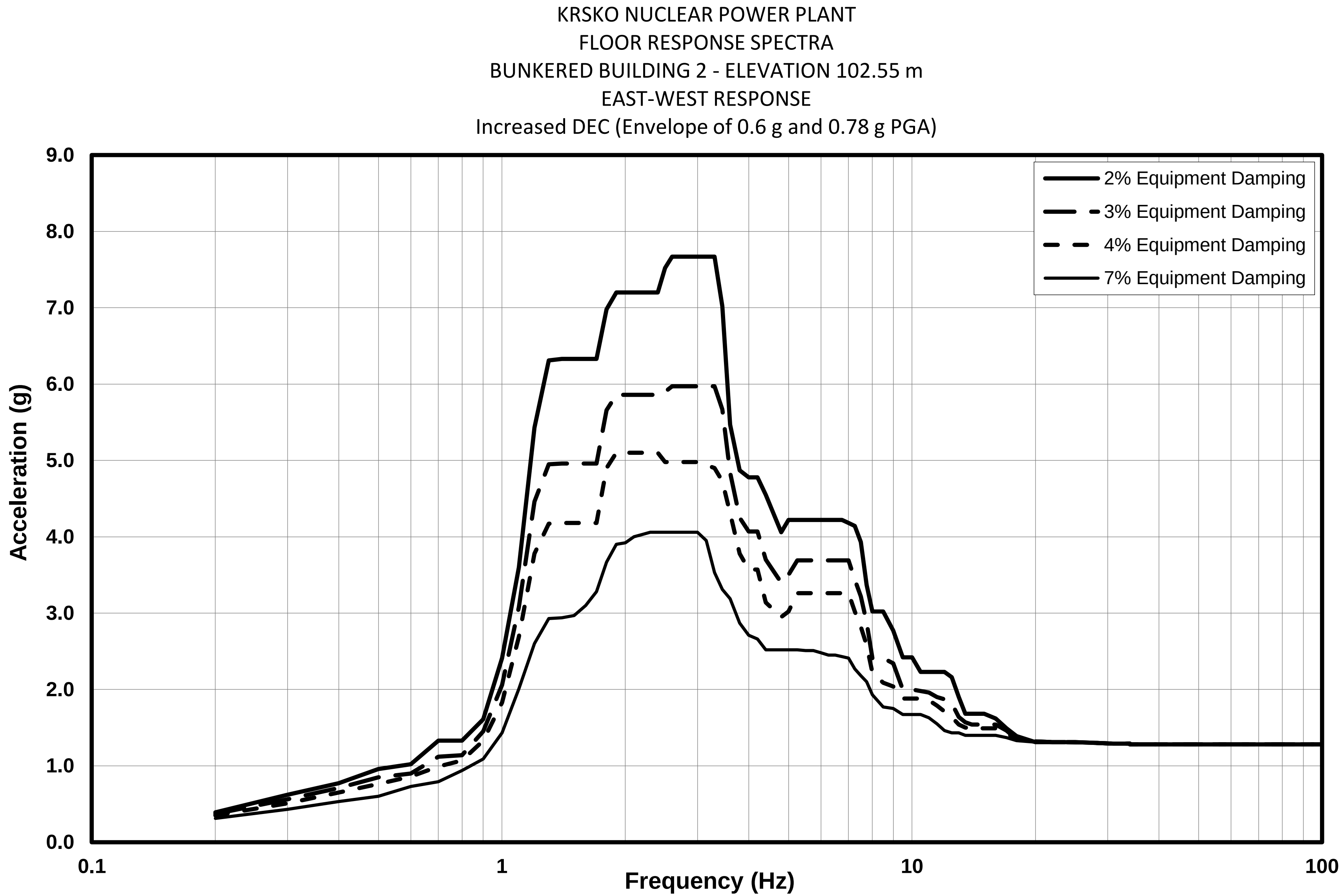

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
EAST-WEST RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E25

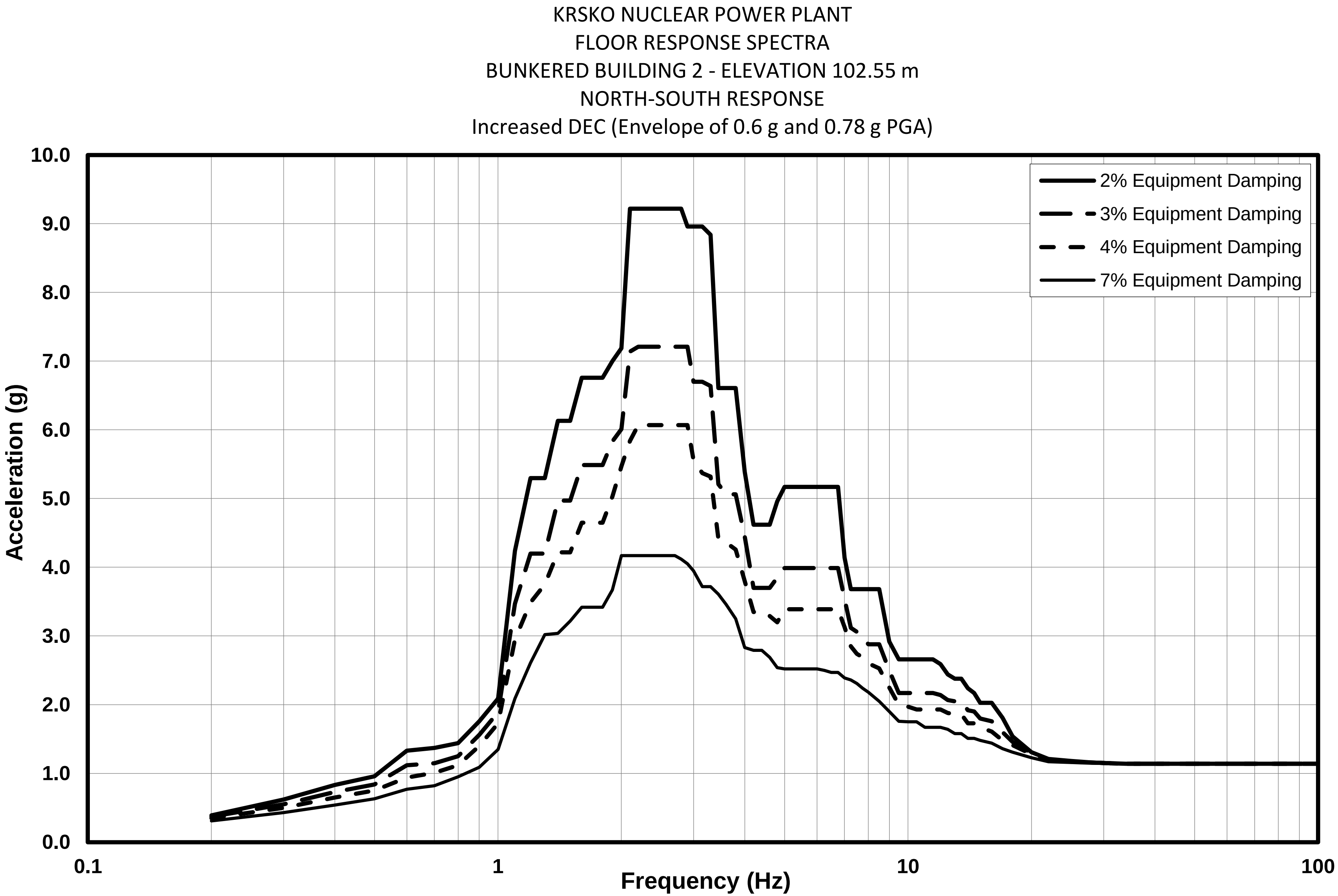

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
NORTH-SOUTH RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.1
1
10
100
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure E26

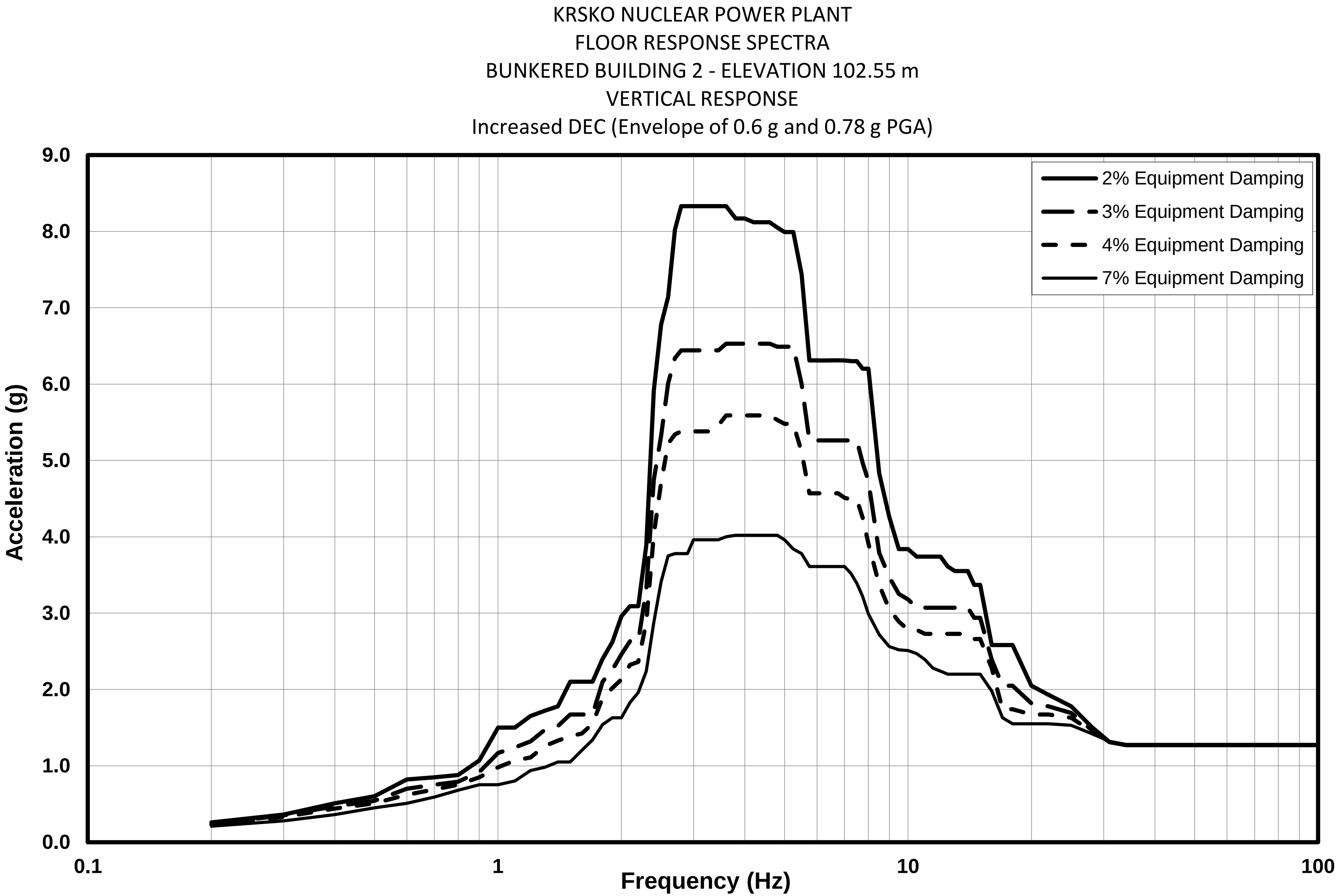

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 102.55 m
VERTICAL RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping

Figure E27

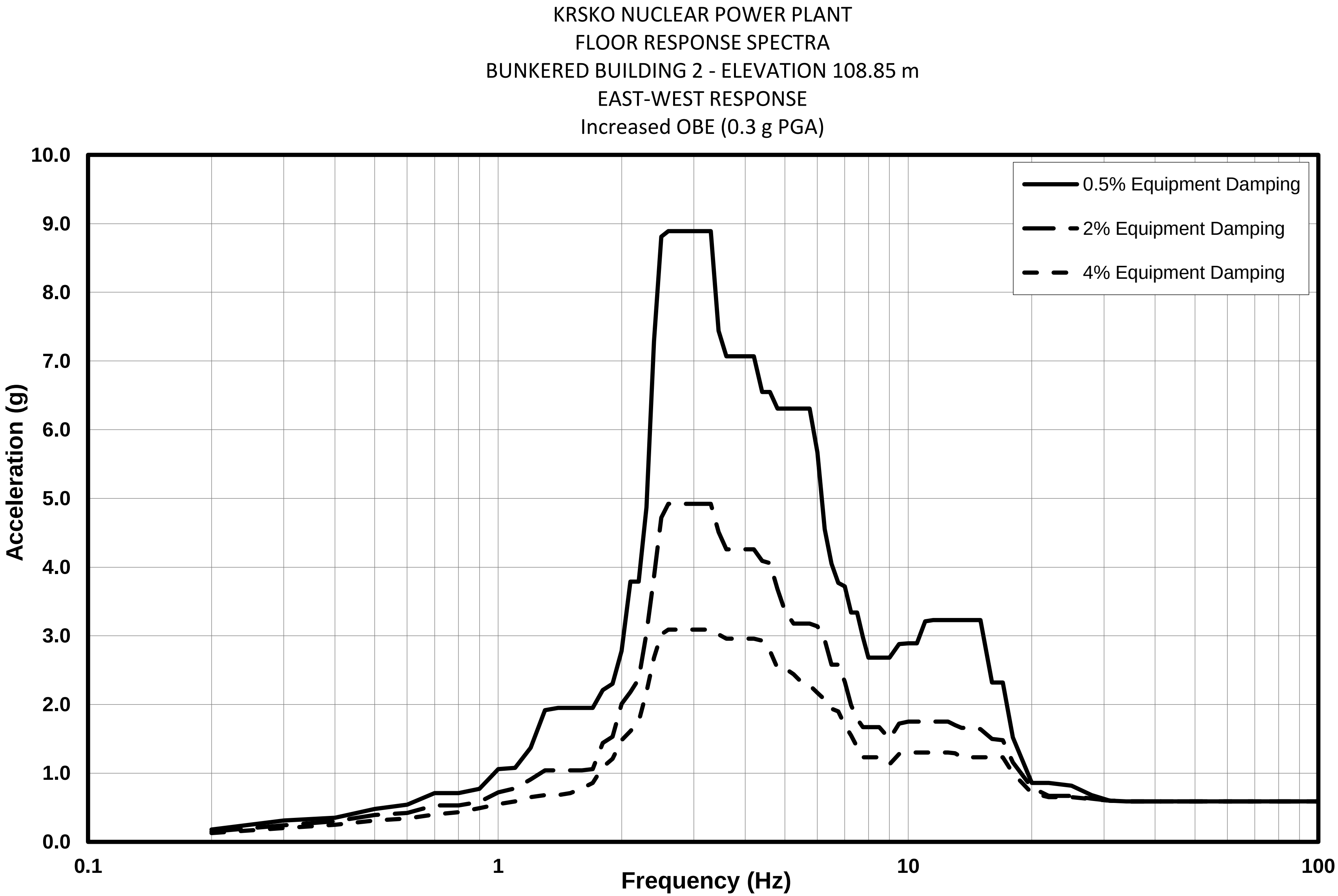
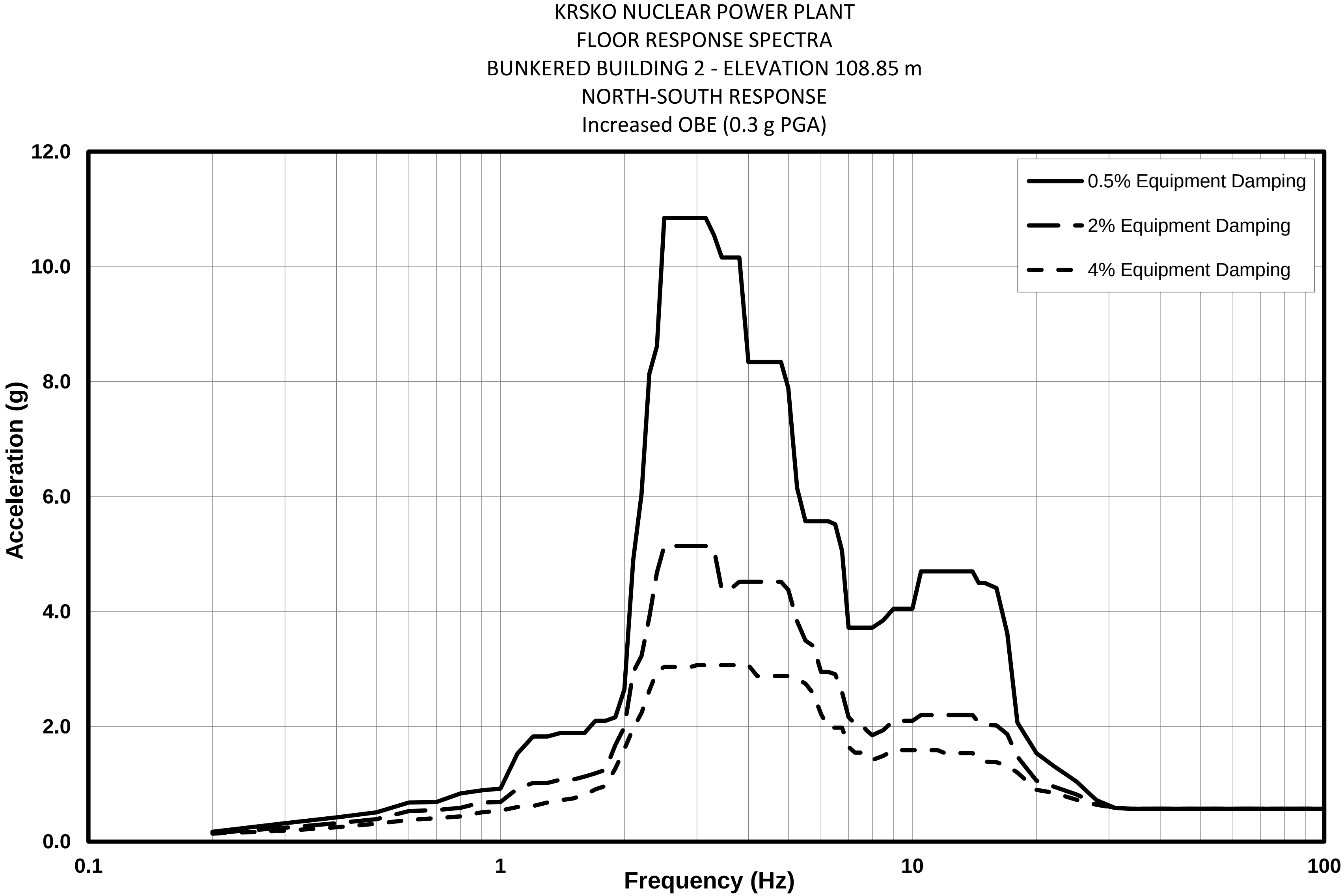

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
EAST-WEST RESPONSE
Increased OBE (0.3 g PGA)
Acceleration (g)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping

Figure E28


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
NORTH-SOUTH RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

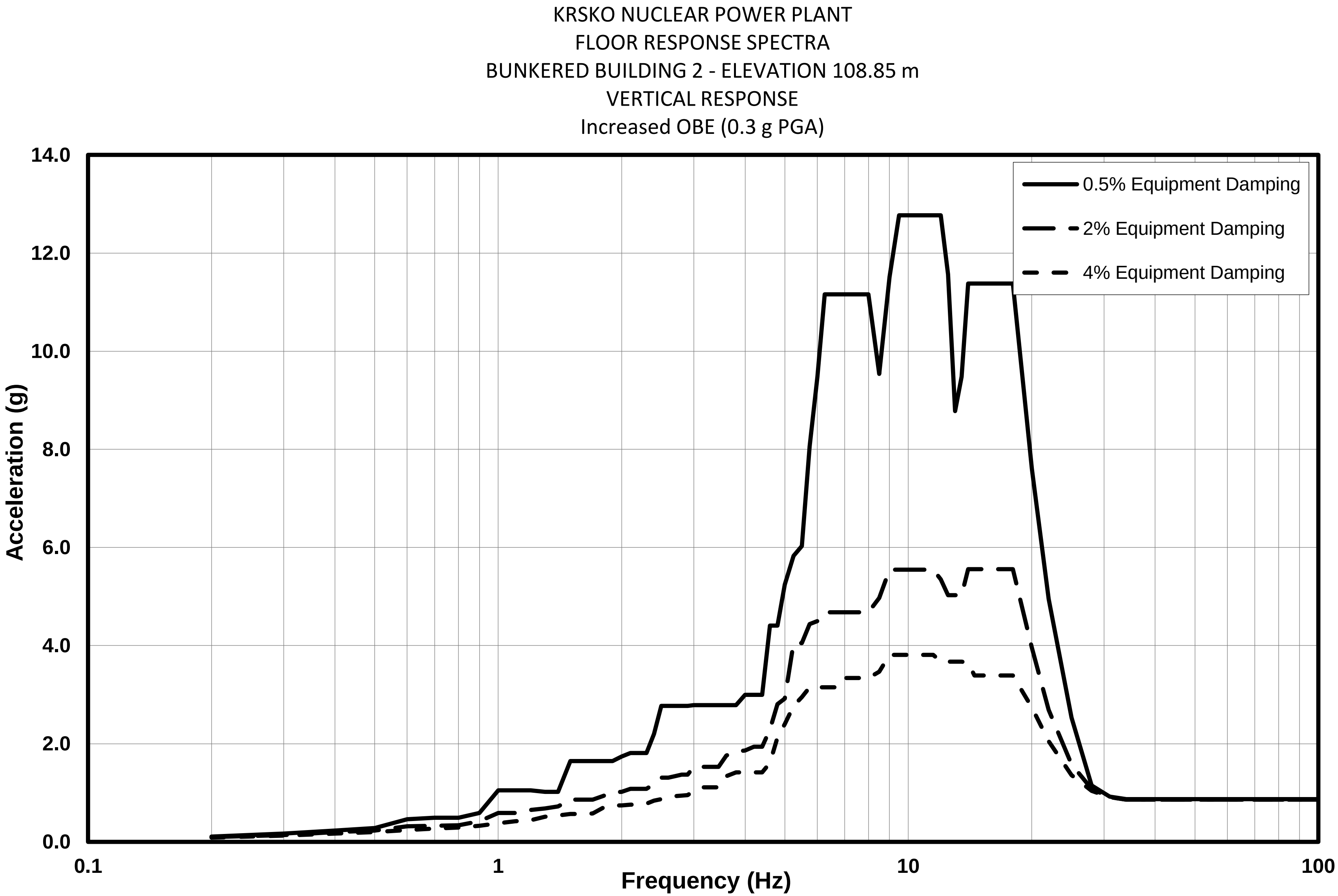
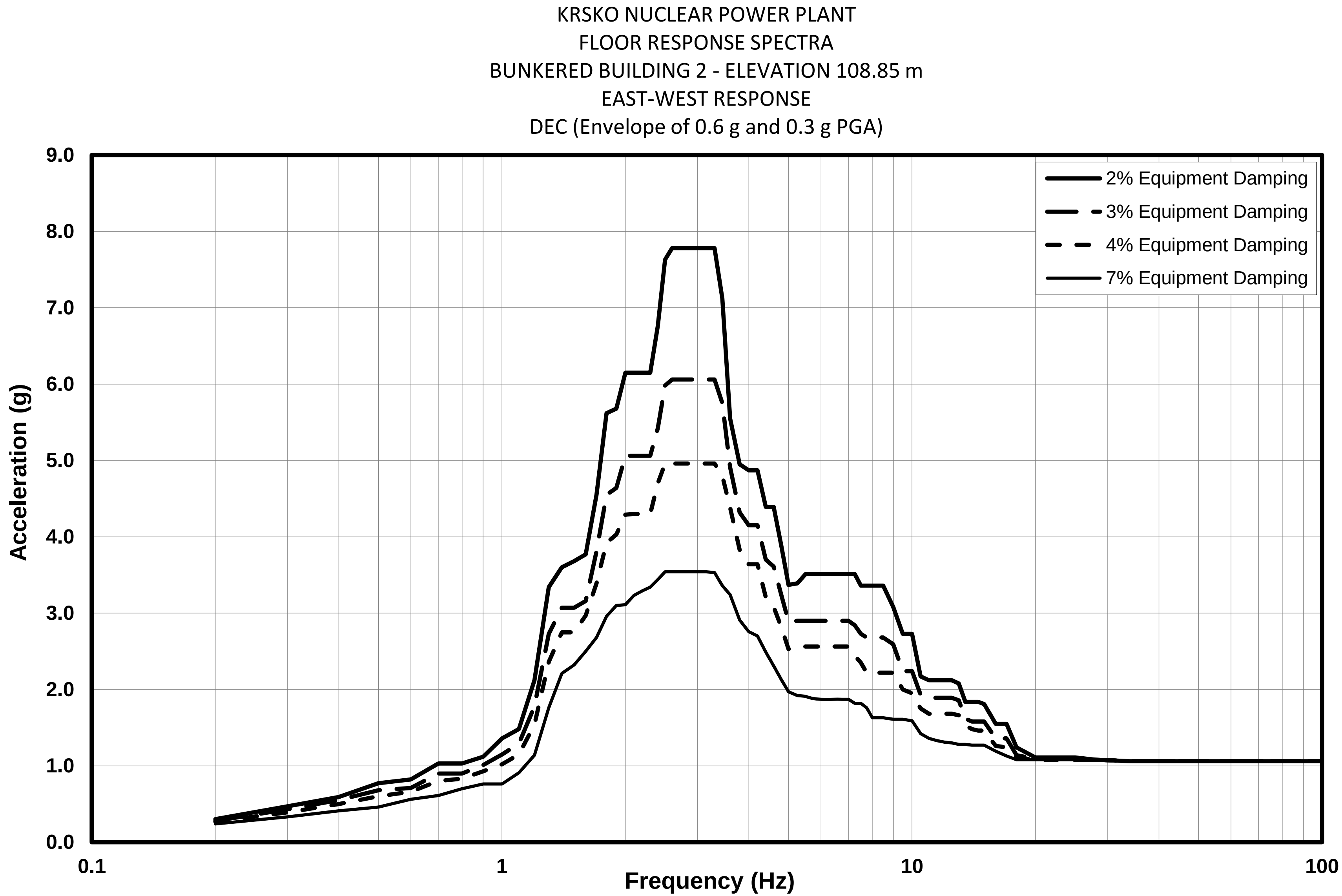
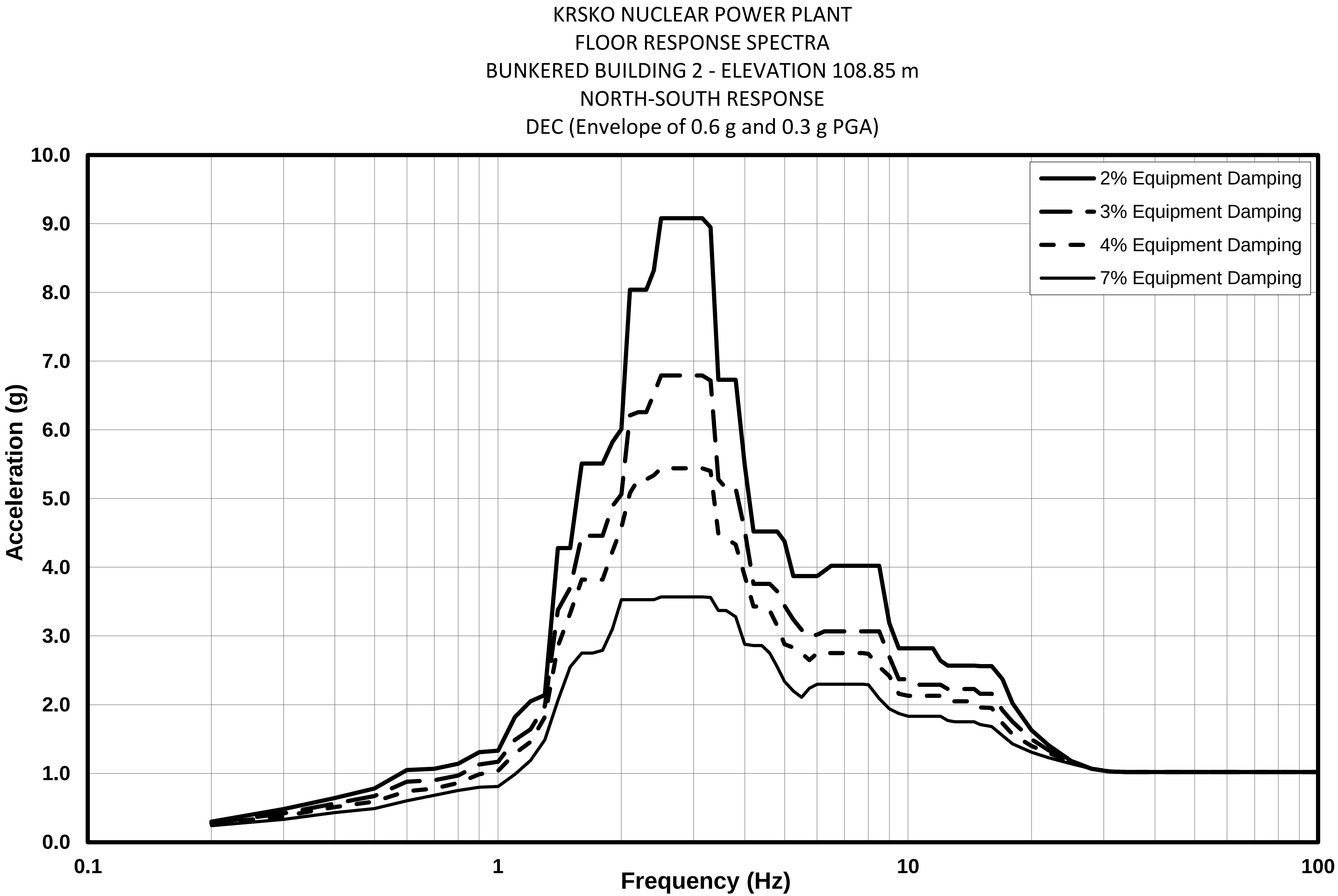
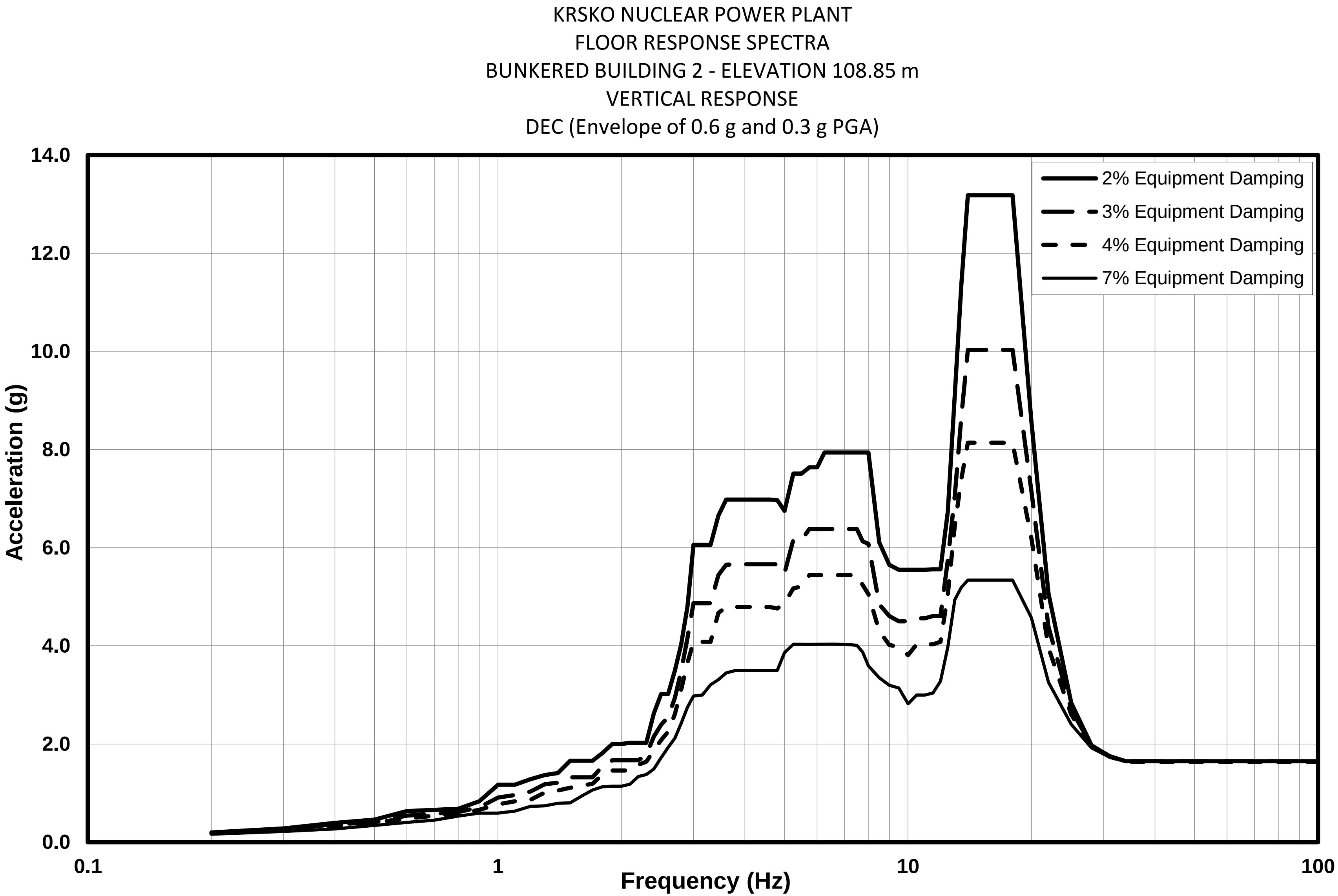
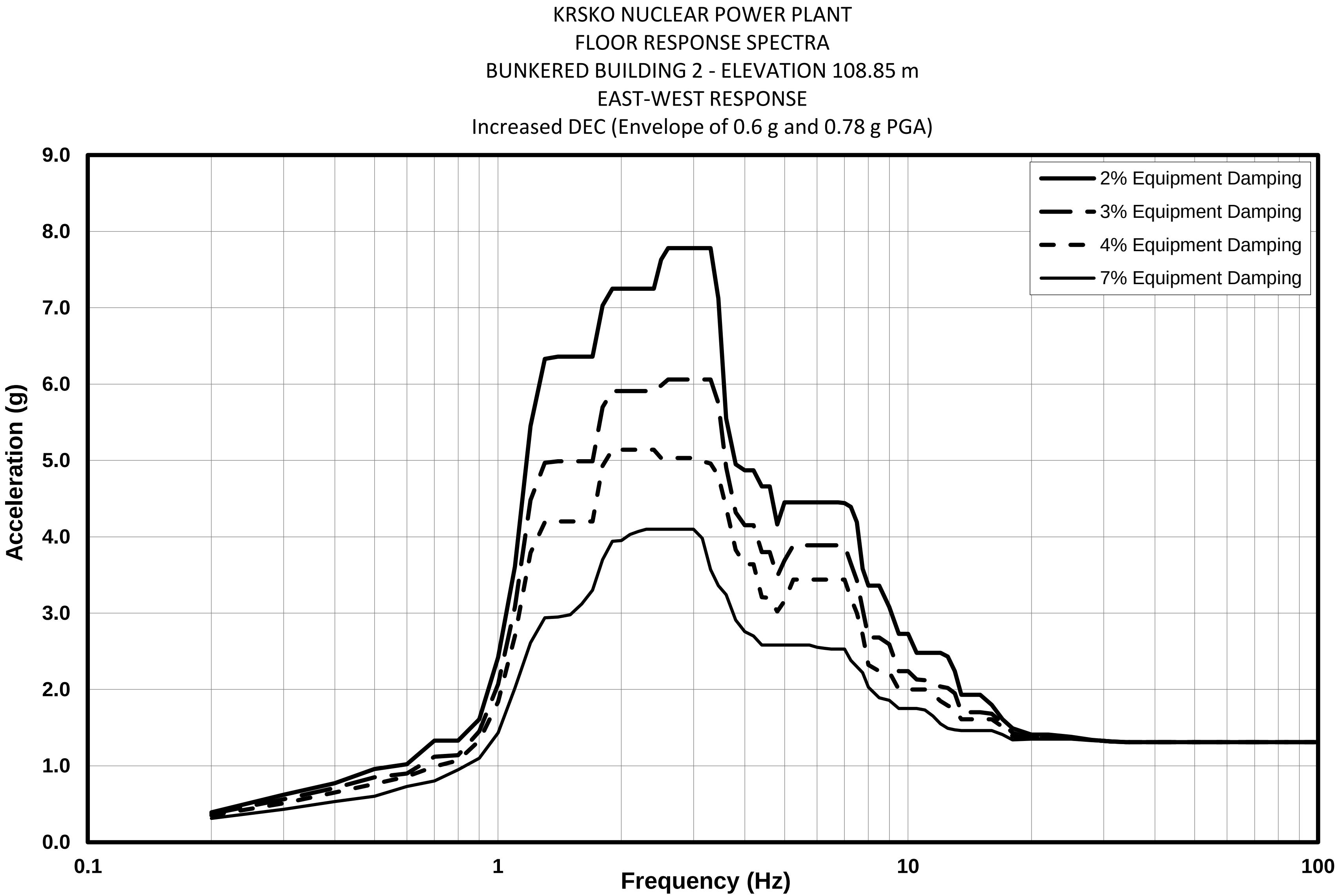

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
VERTICAL RESPONSE
Increased OBE (0.3 g PGA)
0.5% Equipment Damping
2% Equipment Damping
4% Equipment Damping
Acceleration (g)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E30


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
EAST-WEST RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
NORTH-SOUTH RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.1
1
10
100


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
VERTICAL RESPONSE
DEC (Envelope of 0.6 g and 0.3 g PGA)
Acceleration (g)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping


KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
EAST-WEST RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100
Frequency (Hz)

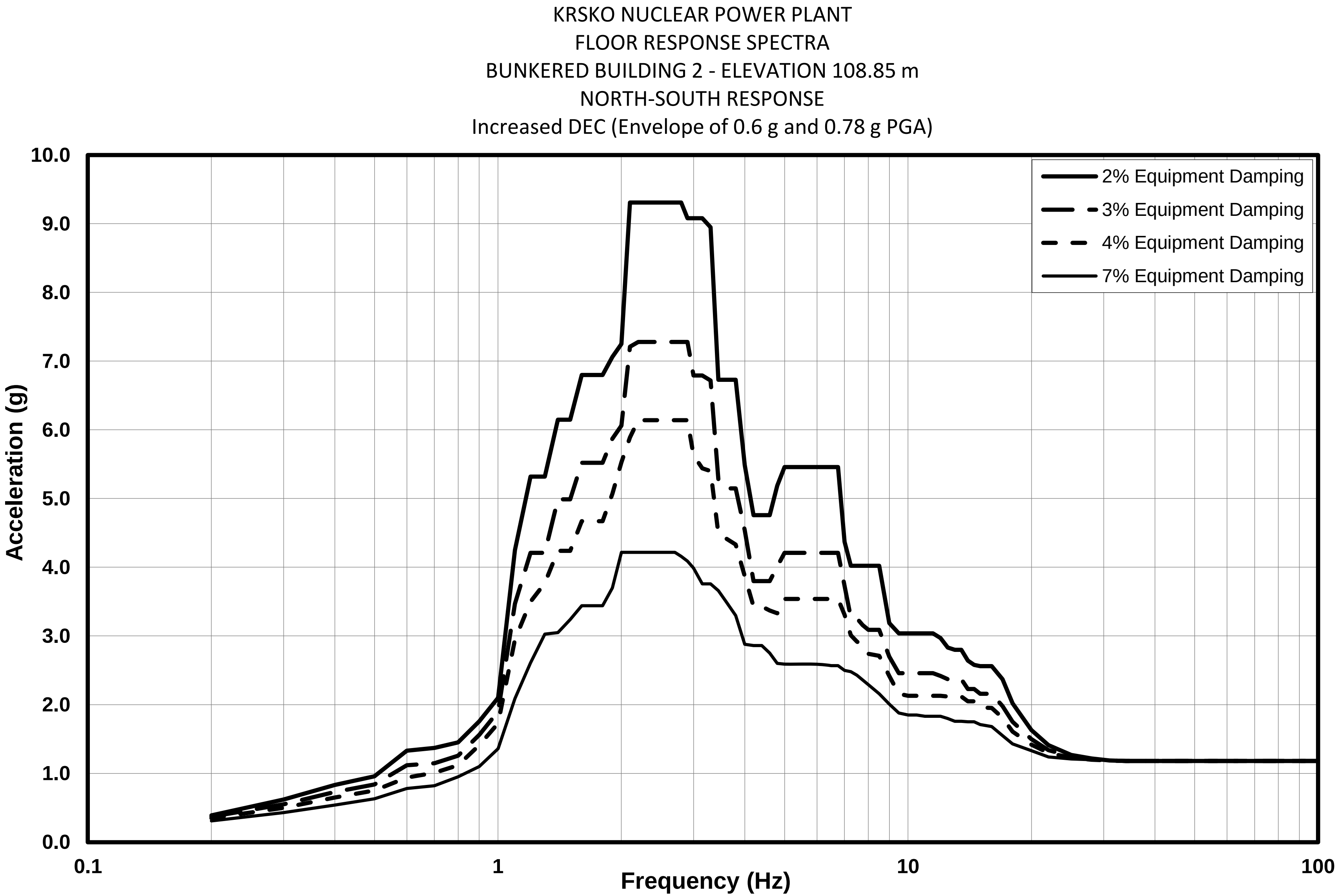

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
NORTH-SOUTH RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
Frequency (Hz)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
1
10
100

Figure E35

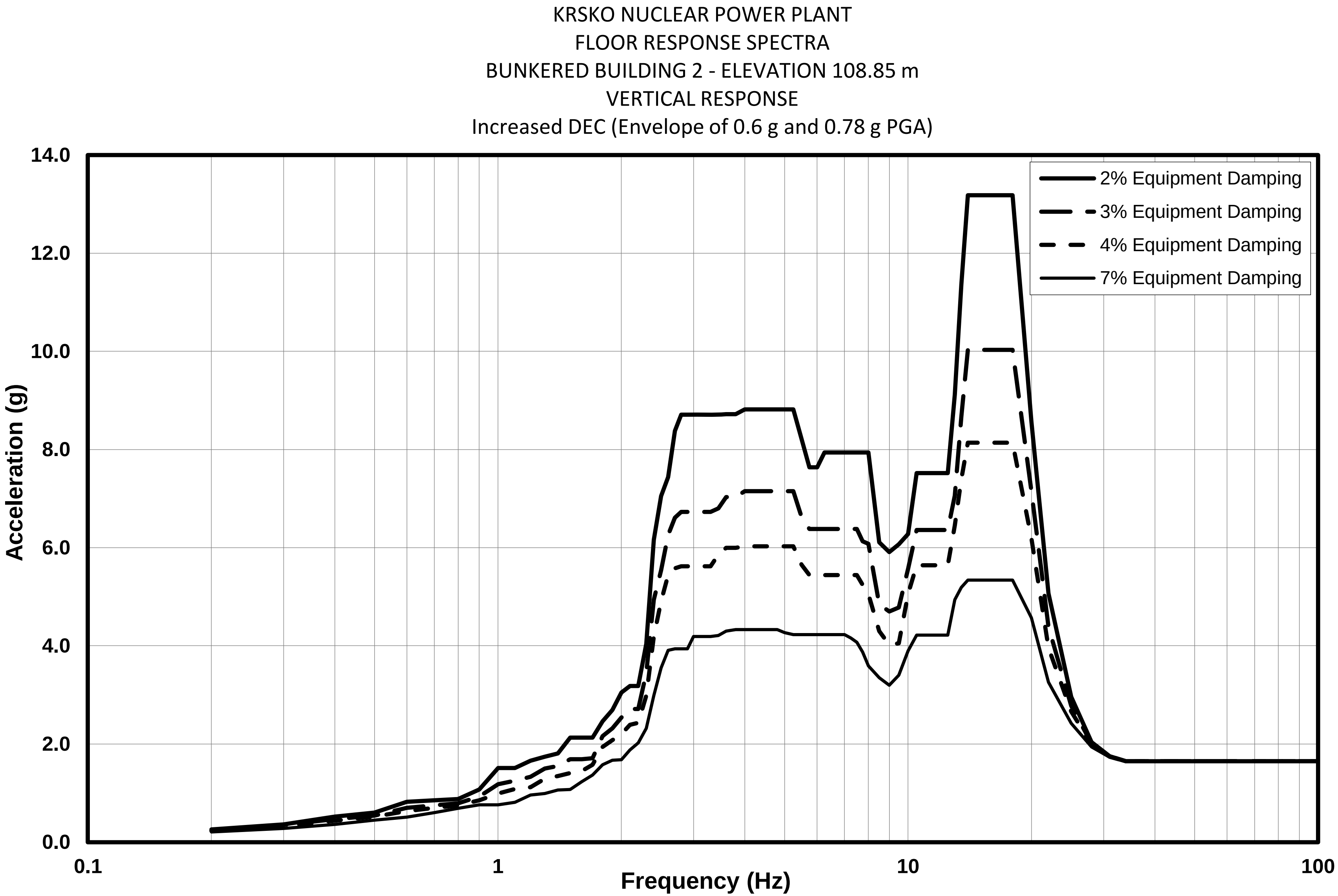

KRSKO NUCLEAR POWER PLANT
FLOOR RESPONSE SPECTRA
BUNKERED BUILDING 2 - ELEVATION 108.85 m
VERTICAL RESPONSE
Increased DEC (Envelope of 0.6 g and 0.78 g PGA)
2% Equipment Damping
3% Equipment Damping
4% Equipment Damping
7% Equipment Damping
Acceleration (g)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0.1
1
10
100
Frequency (Hz)

Figure E36