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SEP 05 2008

Docket No.: 52-011

AR-08-1366

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Early Site Permit Application
Transmittal of Requested 2D SASSI Model Input and Output Files (Referencing RAI # 11)

Ladies and Gentlemen:

By letter dated March 31, 2008, Southern Nuclear Operating Company (SNC) submitted Revision 4 to the Vogtle Early Site Permit (ESP) Application to the U.S. Nuclear Regulatory Commission (NRC). This revision of the ESP application also contains a request for issuance of a Limited Work Authorization (LWA) for Vogtle Electric Generating Plant Units 3 and 4 sites. Subsequently, by letter dated July 22, 2008, the NRC provided SNC with Request for Additional Information (RAI) Letter No. 11 identifying further information needs required by the NRC to complete its detailed safety review of the ESP application and LWA request. The topics covered in the RAI letter are related to ESP application Site Safety Analysis Report (SSAR) Sections 2.4.12, 2.5.2 and 3.8.5. SNC's response to RAI Letter No. 11 involving SSAR Sections 2.5.2 (Vibratory Ground Motion) and 3.8.5 (Foundations) was provided in an SNC letter dated August 14, 2008. SNC's response to RAI Letter No. 11 involving SSAR Section 2.4.12 (Groundwater) was provided in an SNC letter dated August 21, 2008. These letters completed the RAI response requirements. Subsequently, SNC is providing additional 2D SASSI model results and supporting data (input/output) files, as requested, in the enclosures to this letter.

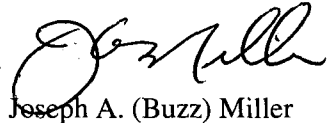
The SNC contact for this letter is J. T. Davis at (205) 992-7692.

DO78
NRO

Mr. J. A. (Buzz) Miller states he is a Senior Vice President of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

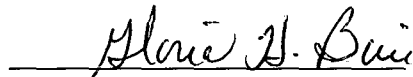
Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



Joseph A. (Buzz) Miller

Sworn to and subscribed before me this 5 day of September, 2008


Notary Public

My commission expires: 05/06/09

JAM/BWW/dmw

Enclosures:

1. AP1000 Vogtle 2D SASSI Model Results
2. Additional 2D SASSI Supporting Data (Input/Output) Files (CD Format)

cc: Southern Nuclear Operating Company

Mr. J. H. Miller, President and CEO
Mr. J. T. Gasser, Executive Vice President, Nuclear Operations
Mr. T. E. Tynan, Vice President - Vogtle
Mr. D. M. Lloyd, Vogtle Deployment Director
Mr. C. R. Pierce, Vogtle Development Licensing Manager
Mr. D. P. Moore, Consulting Engineer
Mr. T. O. McCallum, Vogtle Deployment Project Manager
Document Services RTYPE: AR01
File AR.01.01.06

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Mr. M. R. Johnson, Director of Office of New Reactors
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Mr. M. D. Notich, Environmental Project Manager
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K. B. Allison, Project Manager (w/o enclosure)
J. M. Oddo, Licensing Manager

Westinghouse Electric Company, LLC

J. L. Whiteman, Principal Engineer, Licensing & Customer Interface

Southern Nuclear Operating Company

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Enclosure 1

AP1000 Vogtle 2D SASSI Model Results

NOTE: This enclosure consists of a 19-page attachment.

AP1000 Vogtle 2D SSI Models and Results

Introduction:

SNC had requested Bechtel to perform a peer review of the Westinghouse (WEC) 2D SASSI soil-structure interaction results. Bechtel reviewed the original input files and revised them slightly, and performed additional parametric studies for SNC. The results were compared with original WEC analysis results. Comparisons showed that the results are in good agreement and differences are insignificant. The following notes explain these analyses.

1. Case 1: WEC Vogtle 2D SASSI models and results that are the basis for results provided in the ESP SAR 2.5.2 Appendix 2.5E. Westinghouse model assumes no soil traction on the side walls of NI and only normal stresses are transferred between the walls and the soil.
2. Case 2: Bechtel repeat analysis of Case 1 data provided by WEC with the following changes:
 - a. Streamline the layering in SITE input to improve high frequency wave passage
 - b. Expanding the number of terms in Fourier Transform to maintain quiet zone in the response.
 - c. The radius in POINT2 input is changed to 5.82 ft.

Similar to Case 1, Case 2 also assumes no traction between the side soil and NI side walls.

3. Case 3: Bechtel repeat analysis of the Case 2 data but including modifications in the soil-wall interface conditions to consider full traction between side soil and the NI side walls.
4. In all figures, the symbol XX (YY, ZZ) means the direction of motion due to direction of shaking. For example, 4041XX means ARS at Node 4041 in X-dir motion due to X-dir shaking. In this model, X is the N-S direction, Y is the E-W direction, and Z is the vertical direction.
5. The analyses for all three cases have been performed to 50 Hz.
6. The SASSI input files for the three cases are on the CD (Enclosure 2) listed under the 'Path' heading as Case 1, Case 2 and Case 3.
7. The results at six key locations are compared in Figures 1 through 18. The six key nodes are:

Ni20 SASSI 2D Node	Elevation	Location	General Area
4041	99.00	CIS at Reactor Vessel Support Elevation	RPV Center
4061	116.50	ASB NE Corner at Control Room Floor	NE Corner
4120	179.19	ASB Corner of Fuel Building Roof at Shield Building	NW Corner of Fuel Bldg
4310	327.41	ASB Shield Building Roof Area	South side of Shield Bldg
4412	224.00	SCV Near Polar Crane	SCV Stick Model
4535	134.25	CIS at Operating Deck	SG West compartment, NE

Figure 1

**5% Damped ARS in XX - Direction
at Node 4041, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion**

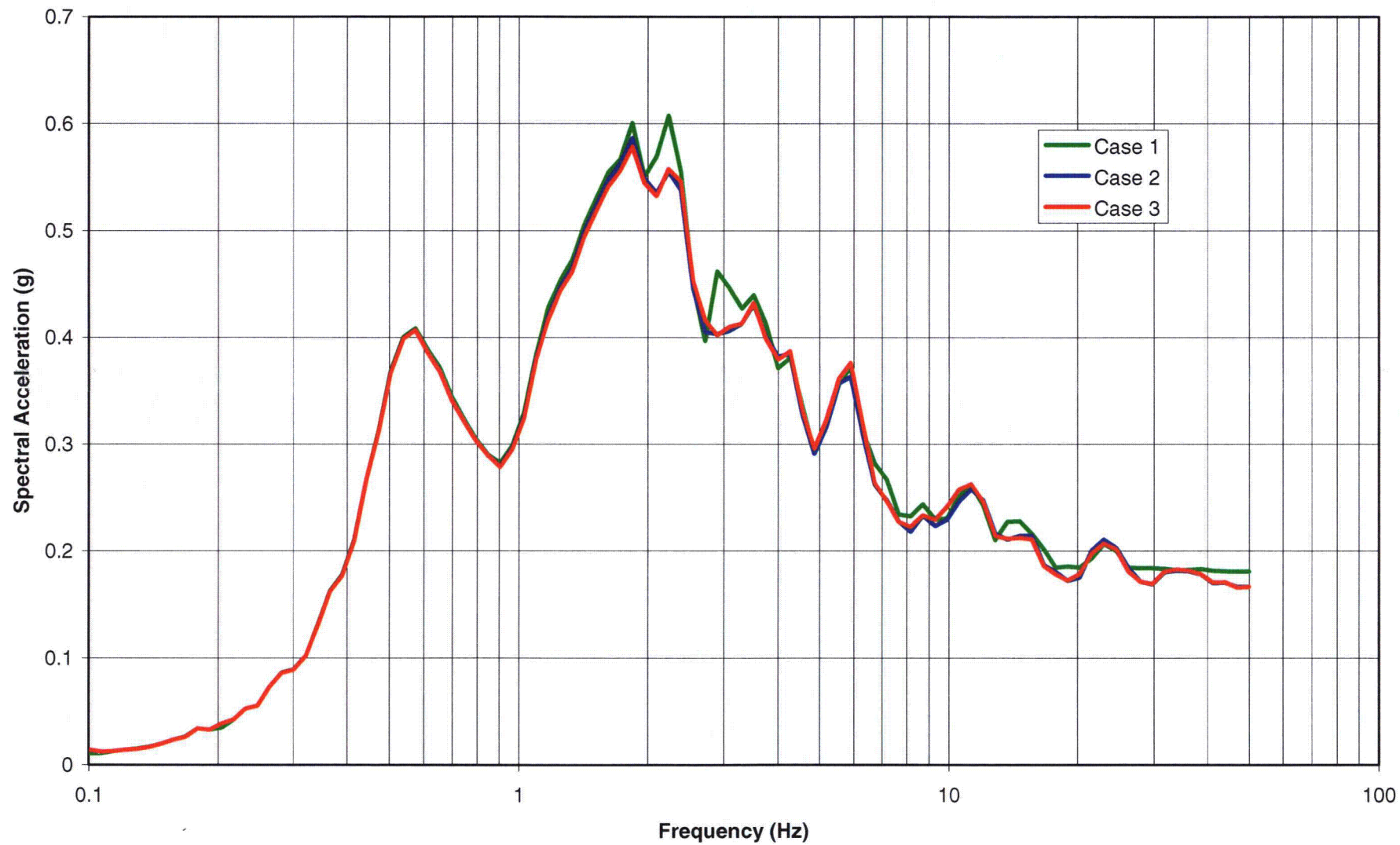


Figure 2
5% Damped ARS in YY - Direction
at Node 4041, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

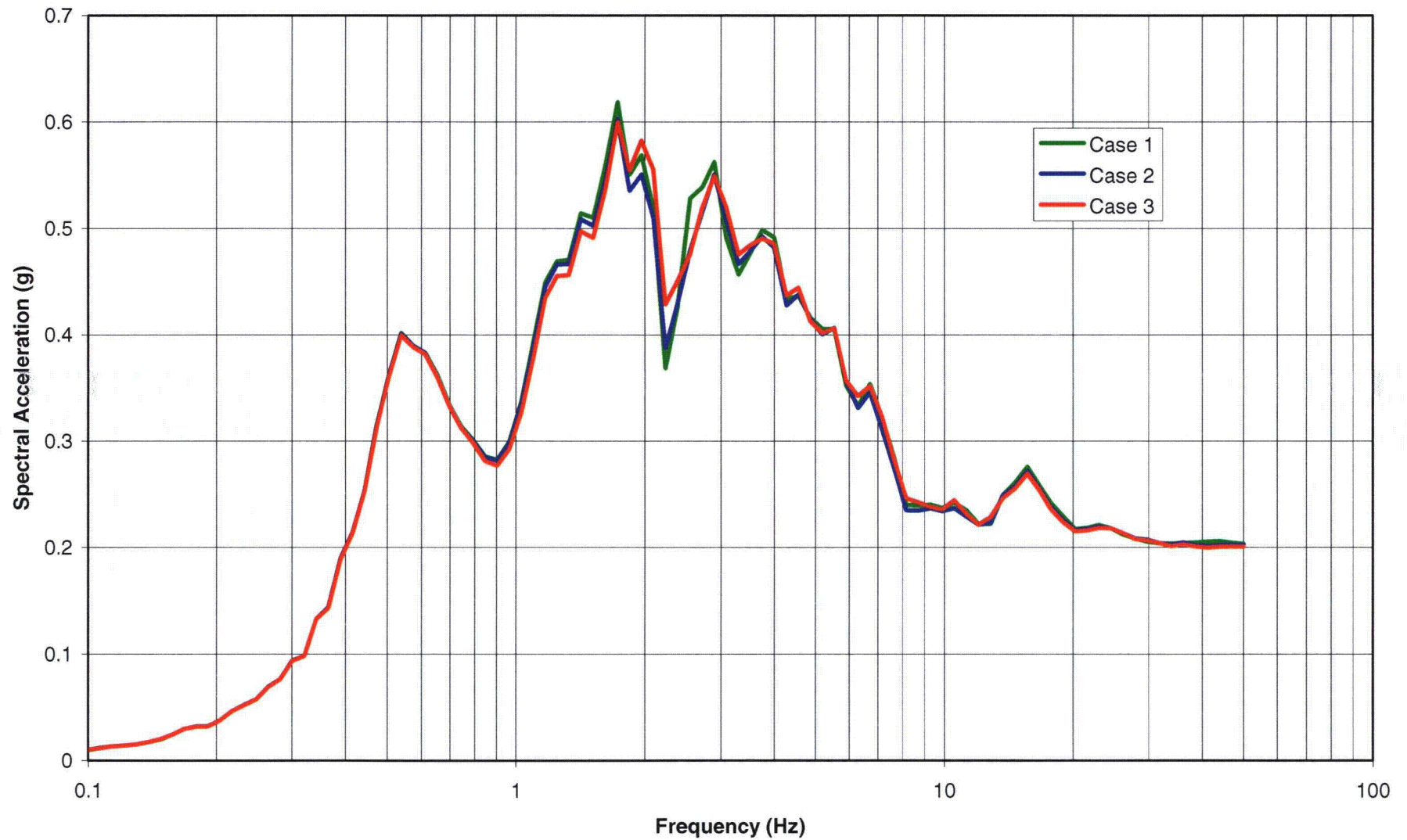


Figure 3
5% Damped ARS in ZZ - Direction
at Node 4041, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

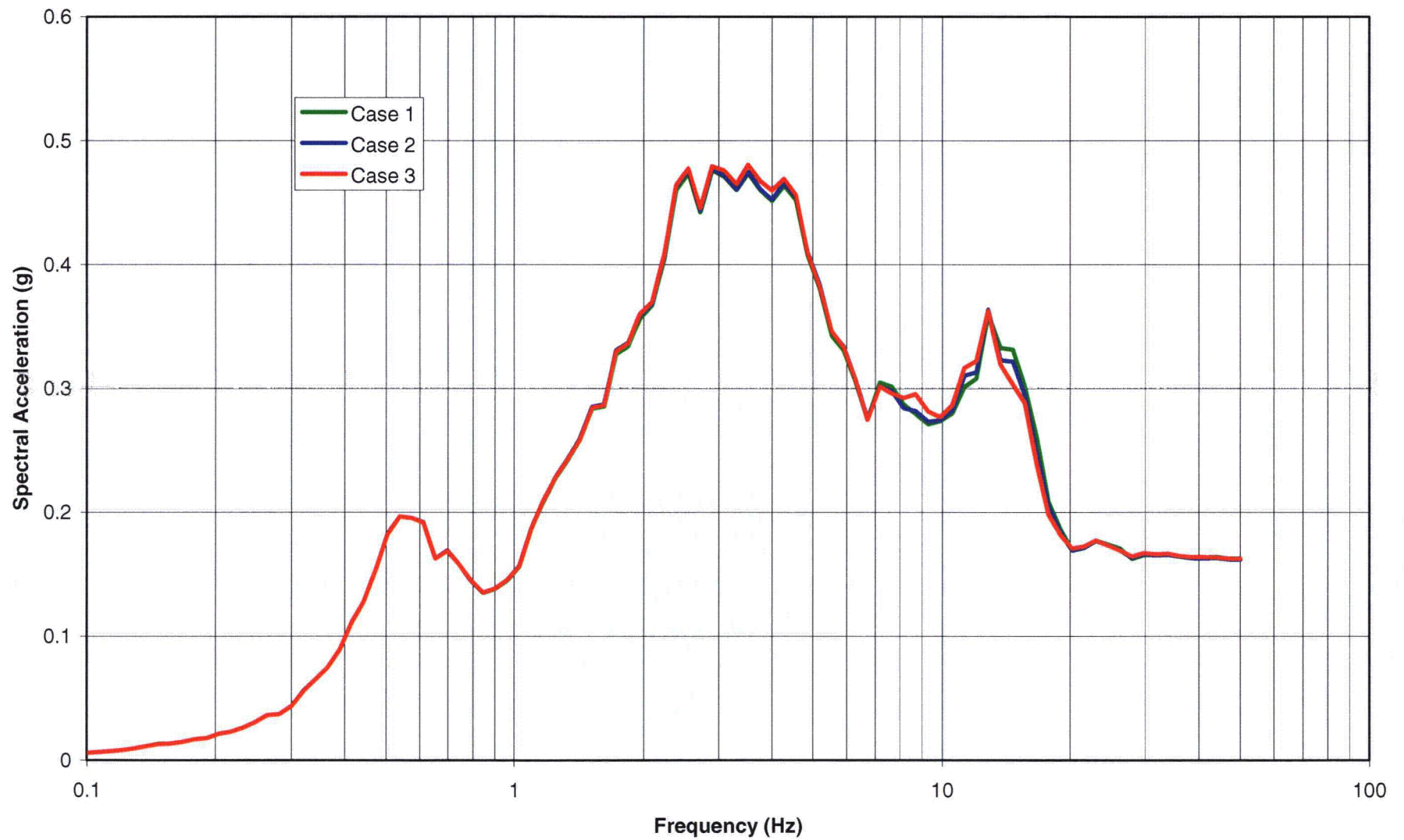


Figure 4
5% Damped ARS in XX - Direction
at Node 4061, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

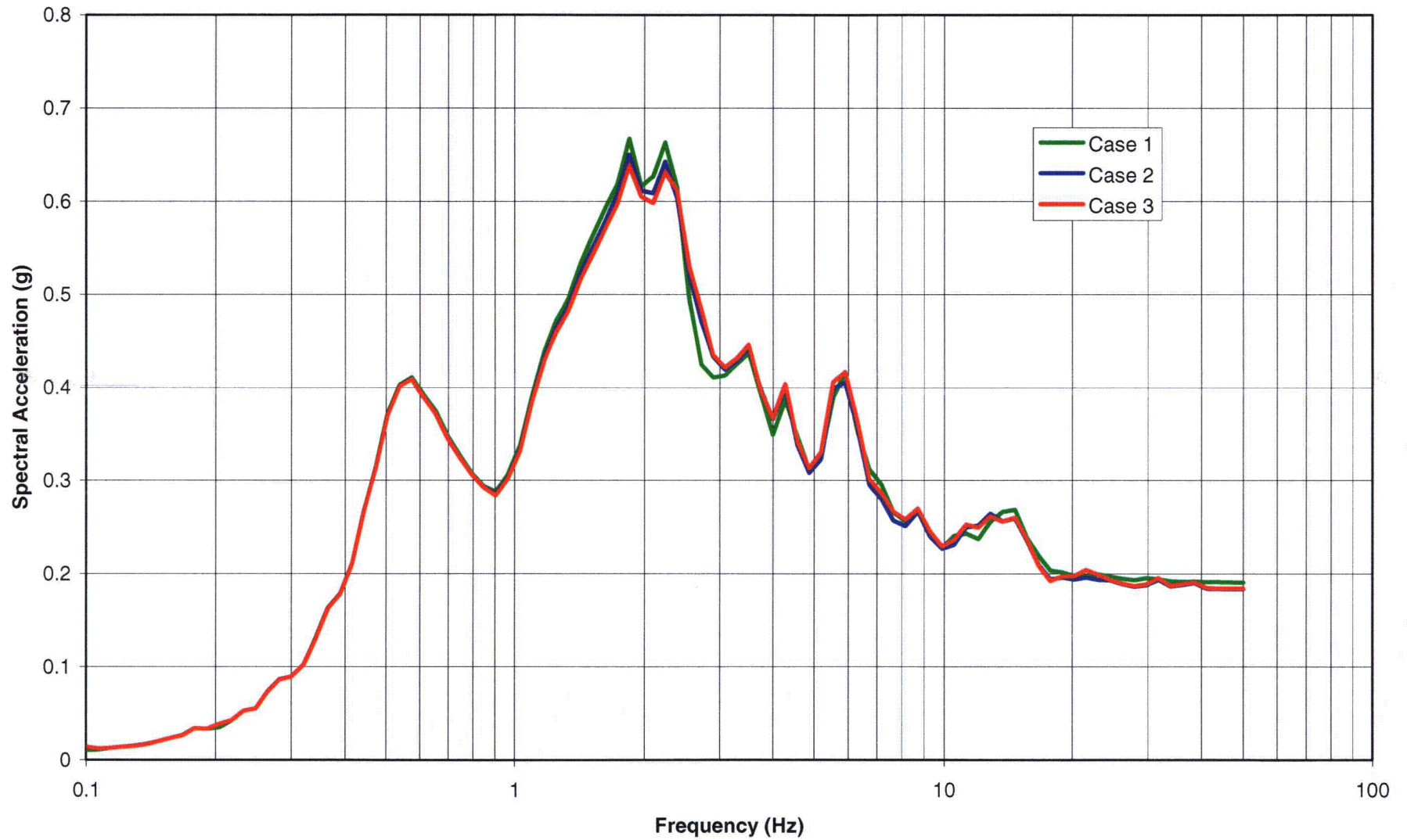


Figure 5
5% Damped ARS in YY - Direction
at Node 4061, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

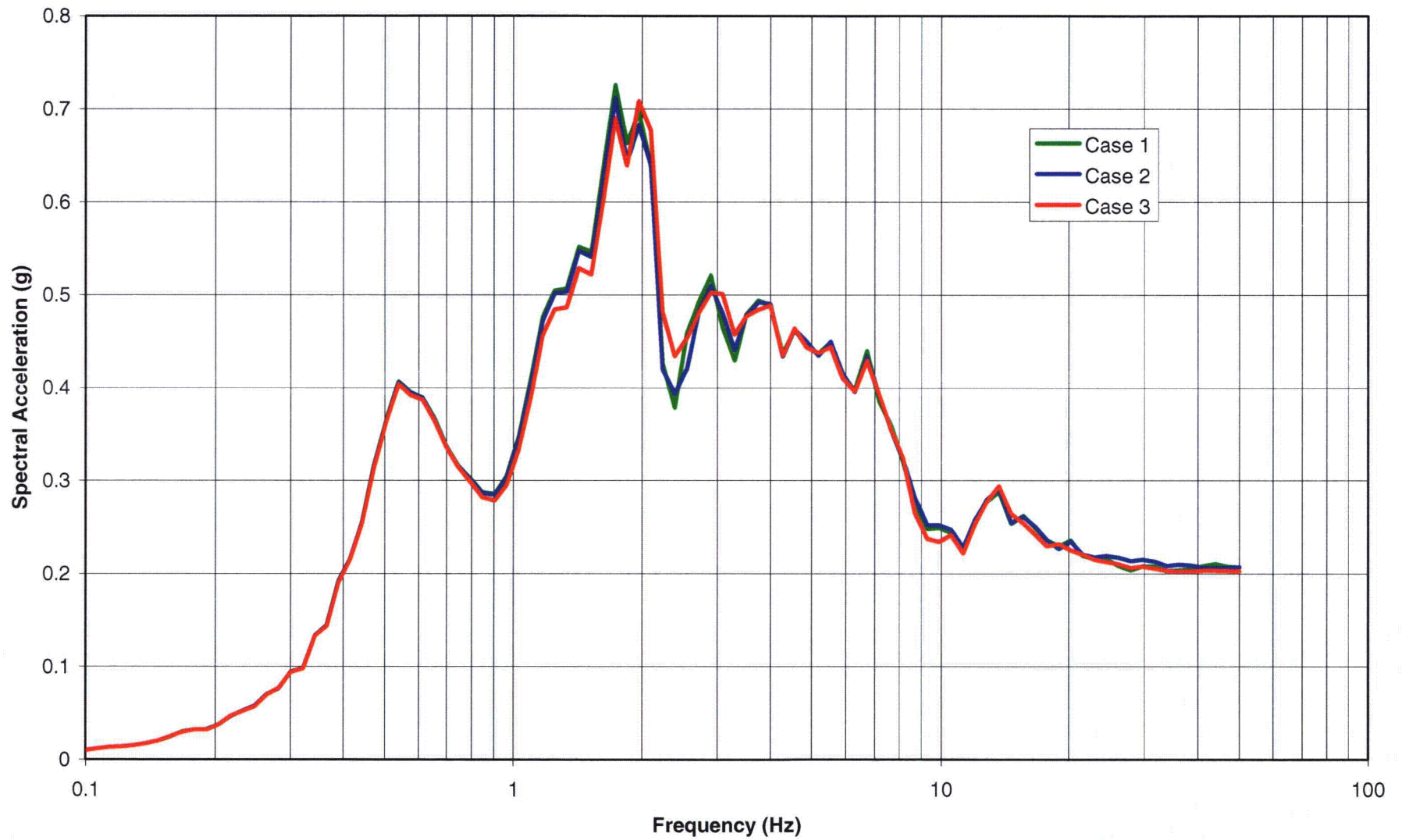


Figure 6
5% Damped ARS in ZZ - Direction
at Node 4061, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

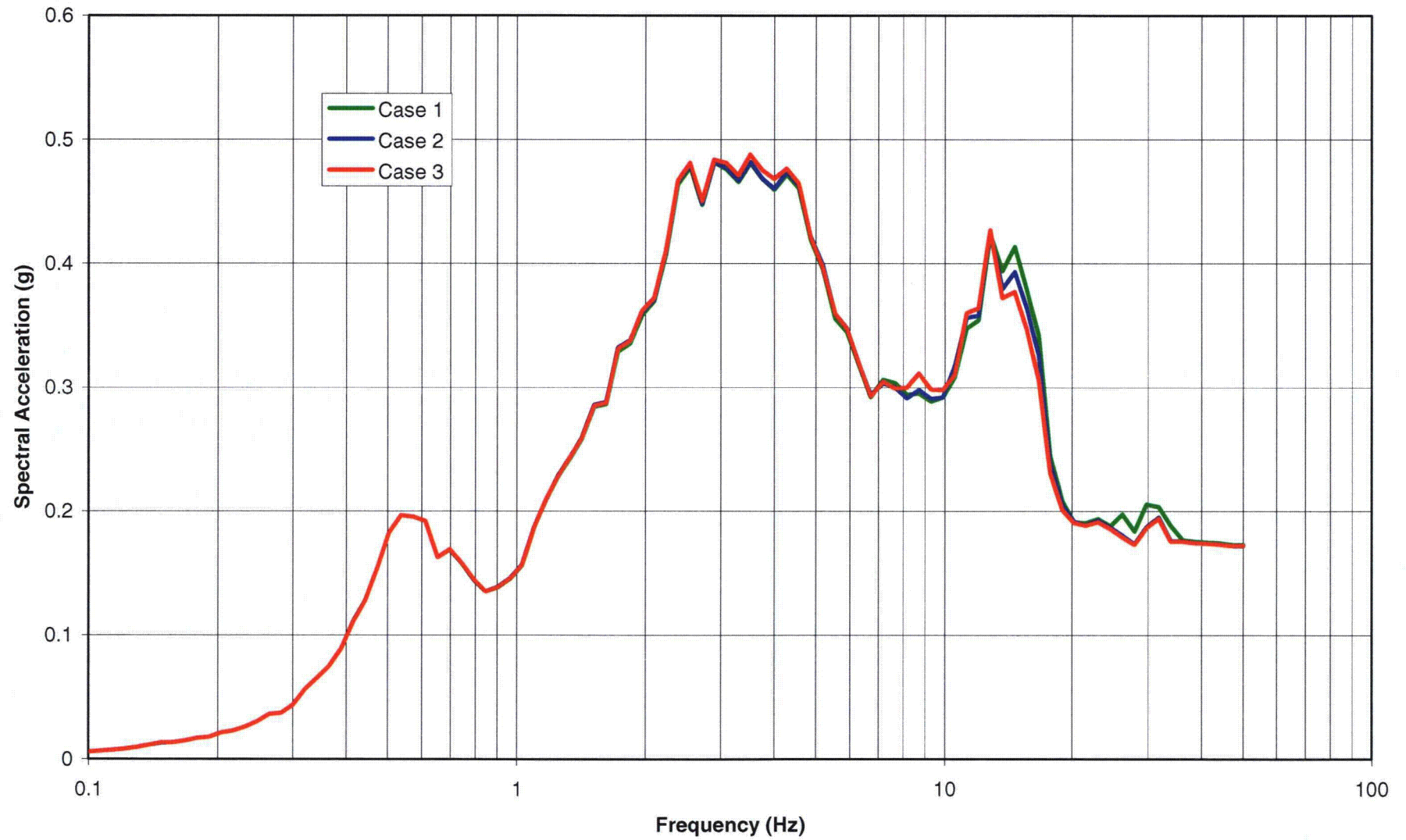


Figure 7
5% Damped ARS in XX - Direction
at Node 4120, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

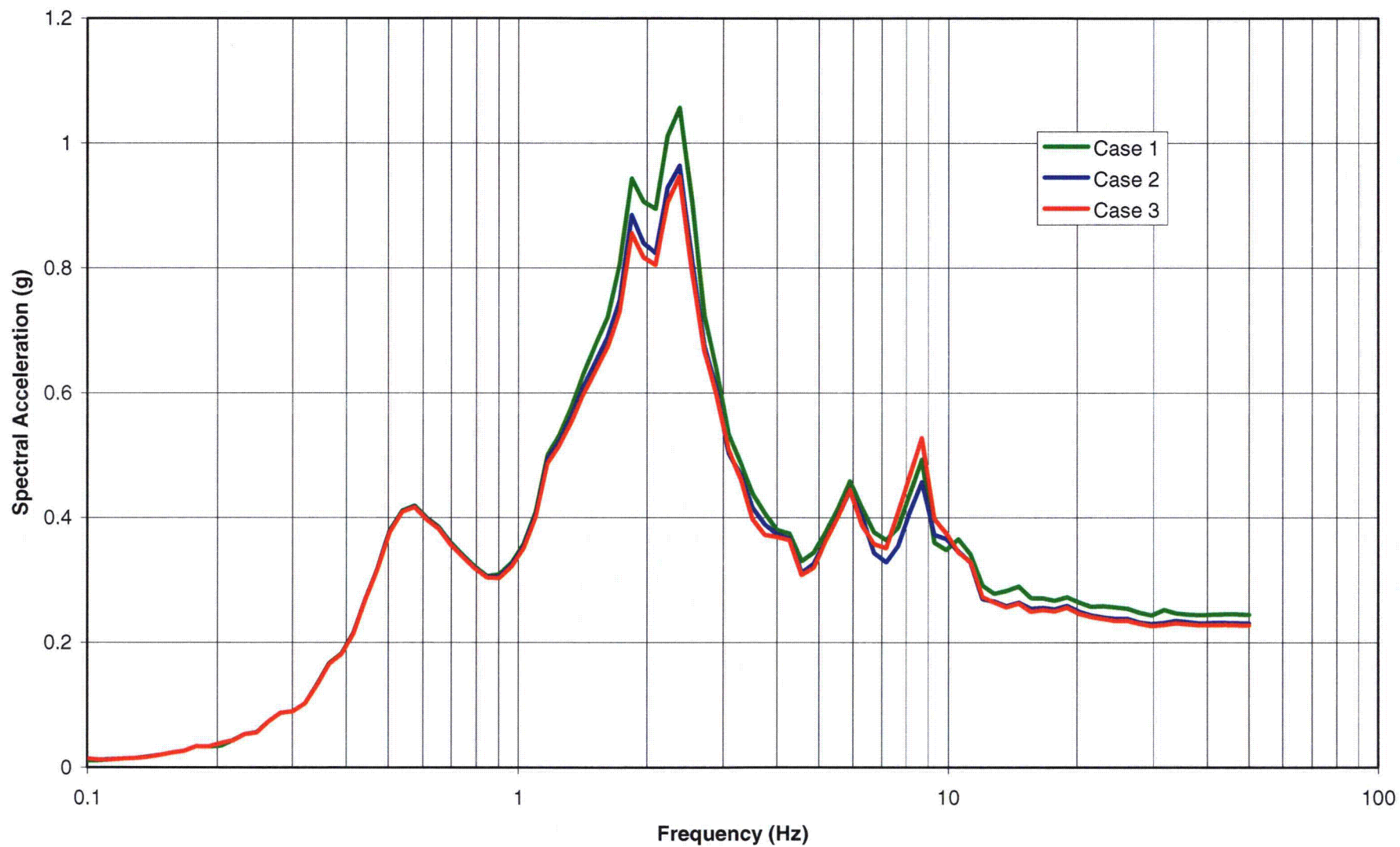


Figure 8
5% Damped ARS in YY - Direction
at Node 4120, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

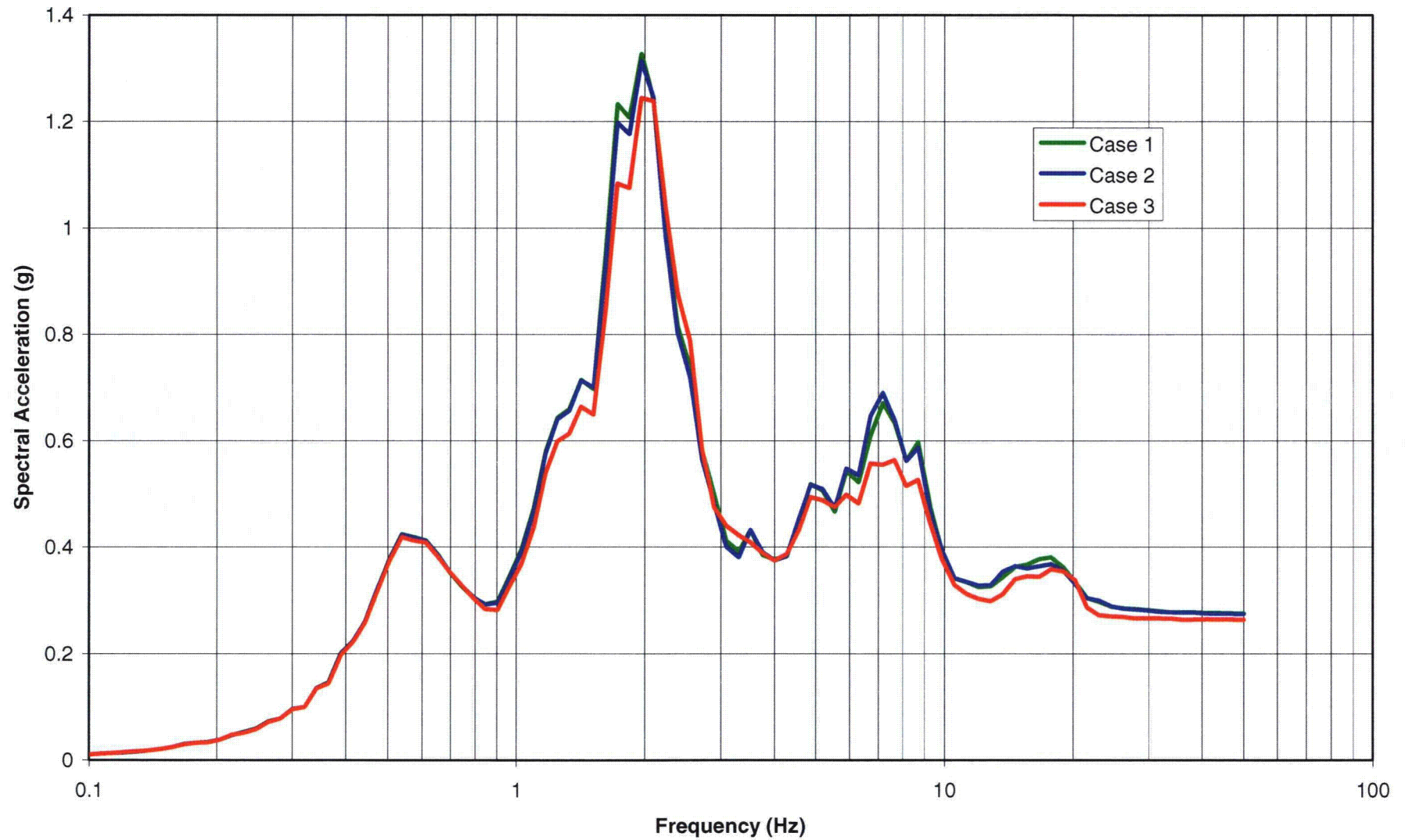


Figure 9
5% Damped ARS in ZZ - Direction
at Node 4120, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

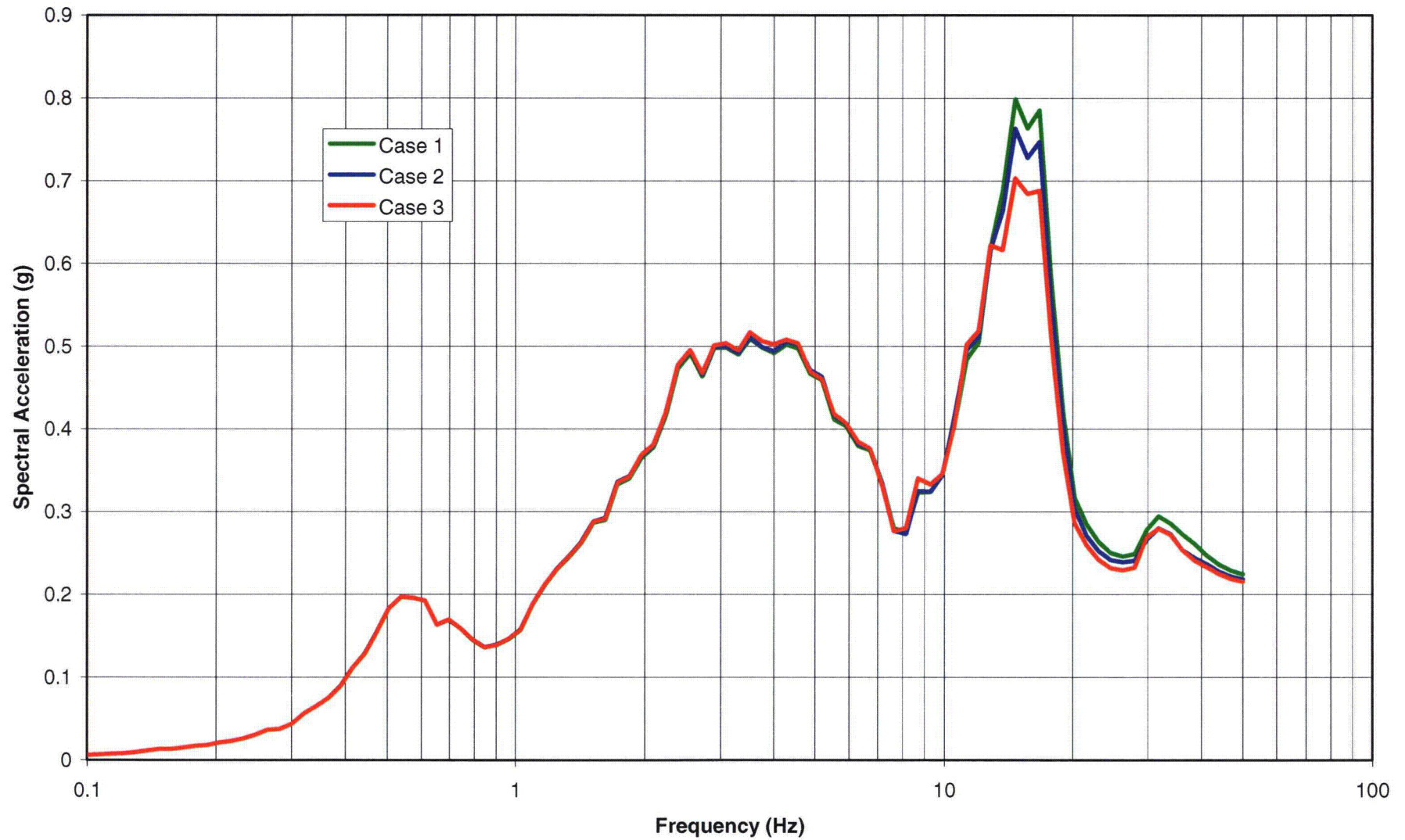


Figure 10
5% Damped ARS in XX - Direction
at Node 4310, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

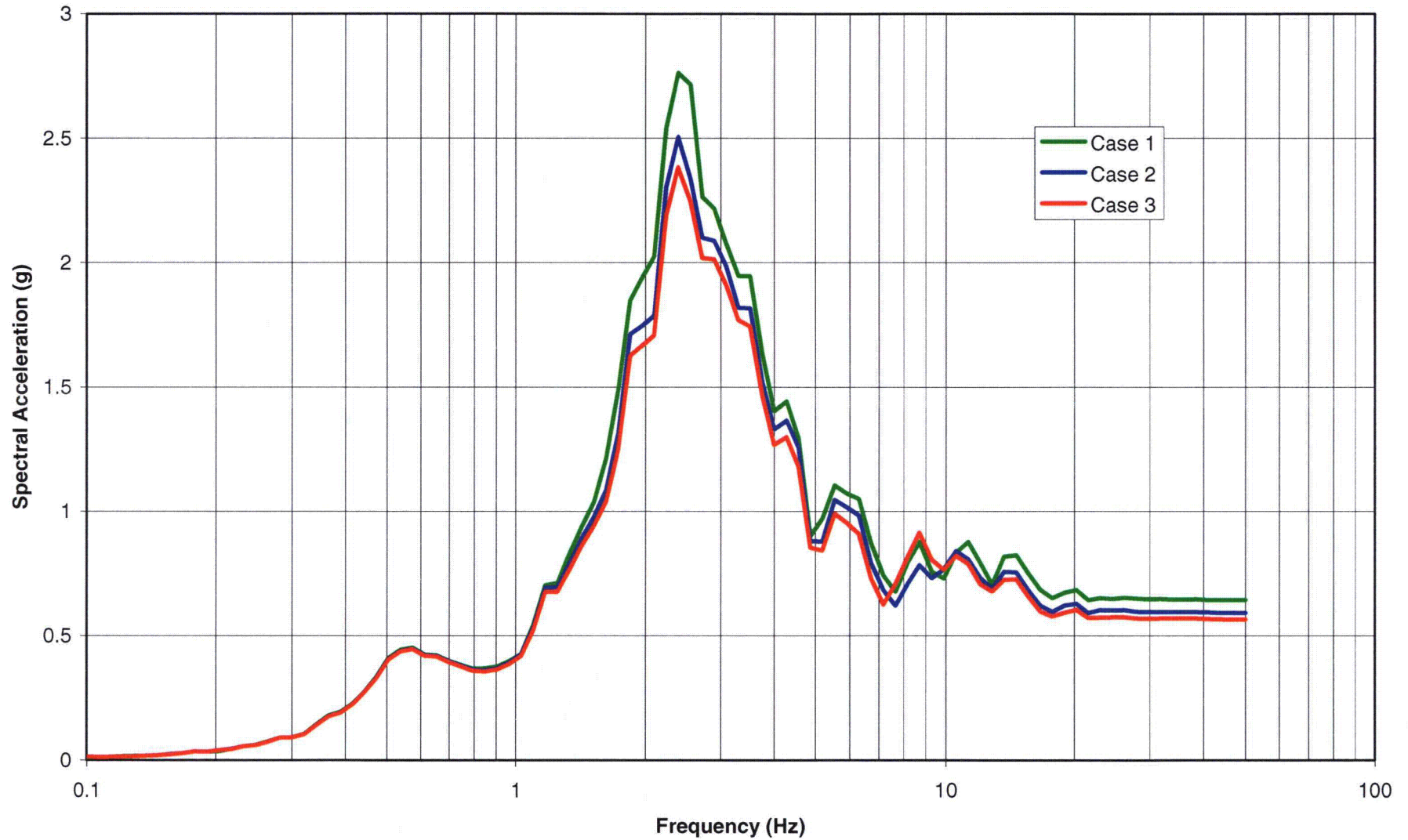


Figure 11
5% Damped ARS in YY - Direction
at Node 4310, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

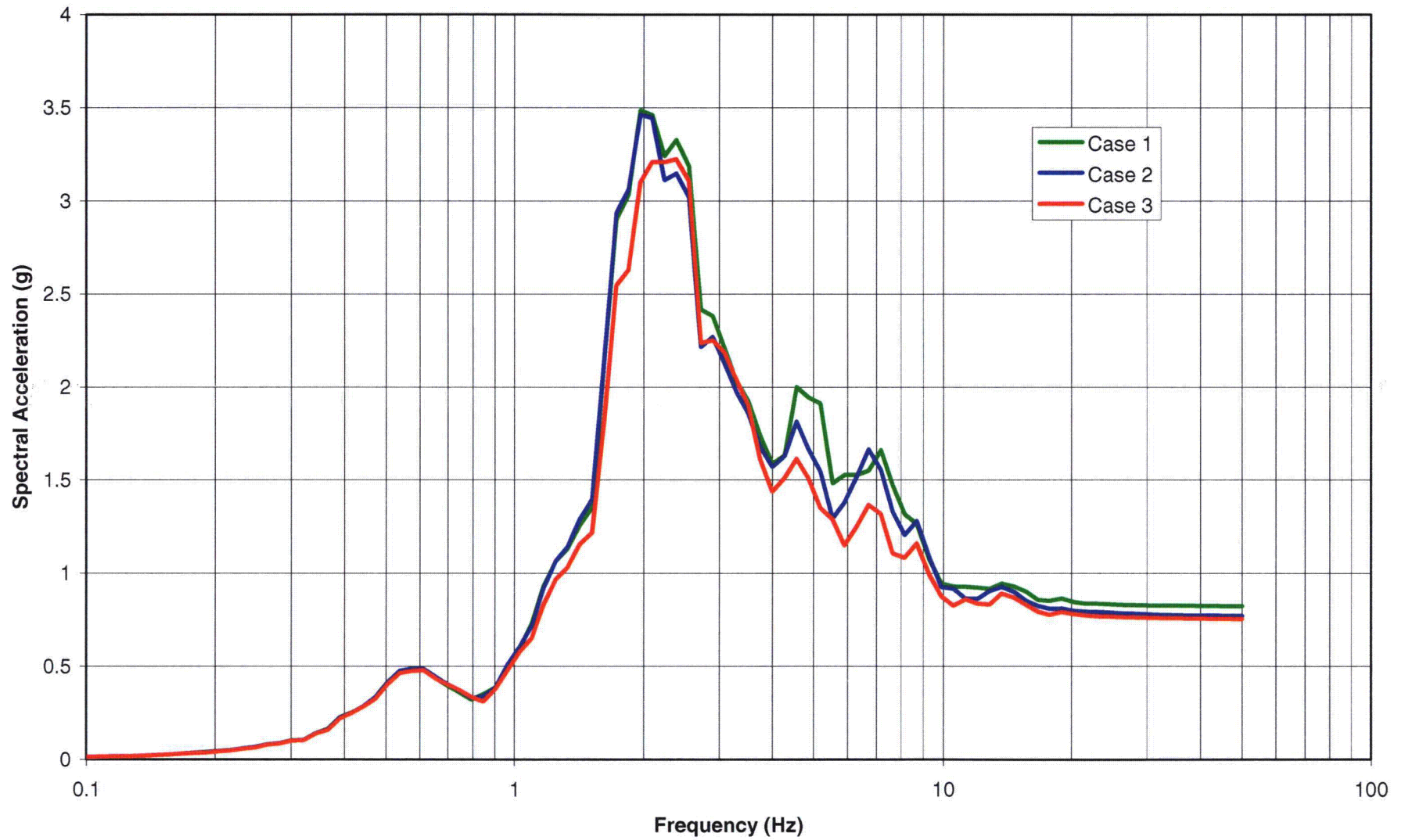


Figure 12
5% Damped ARS in ZZ - Direction
at Node 4310, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

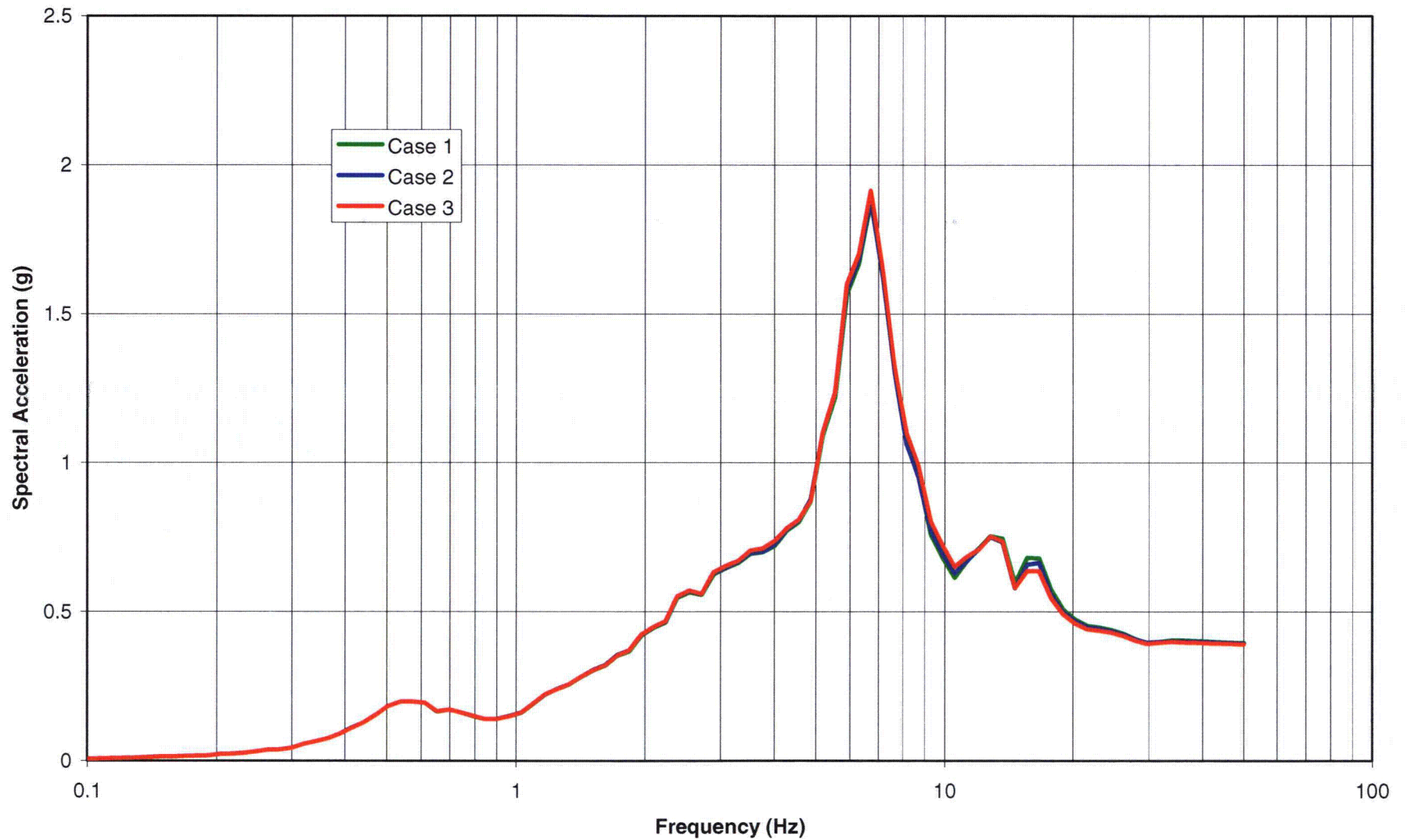


Figure 13
5% Damped ARS in XX - Direction
at Node 4412, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

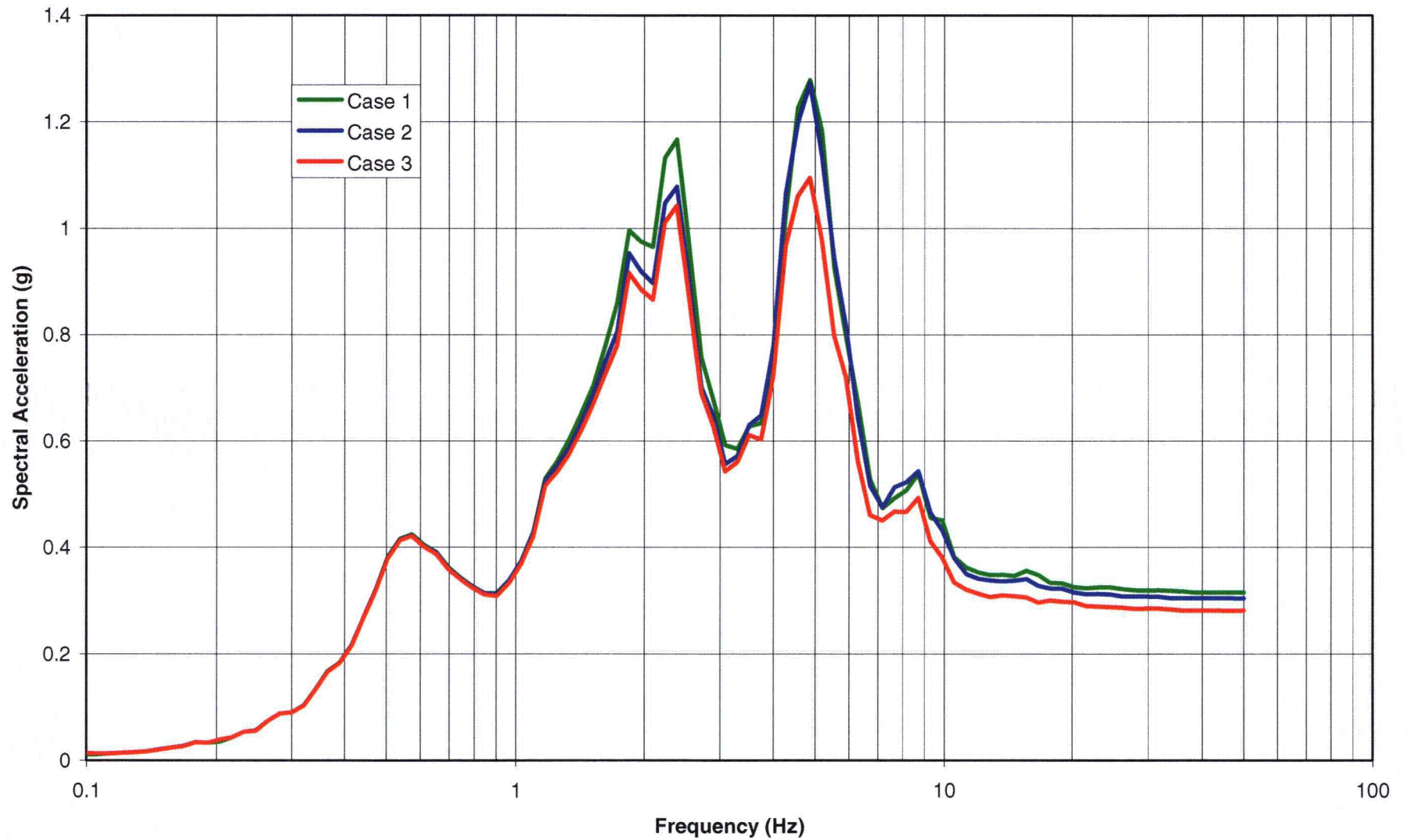


Figure 14
5% Damped ARS in YY - Direction
at Node 4412, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

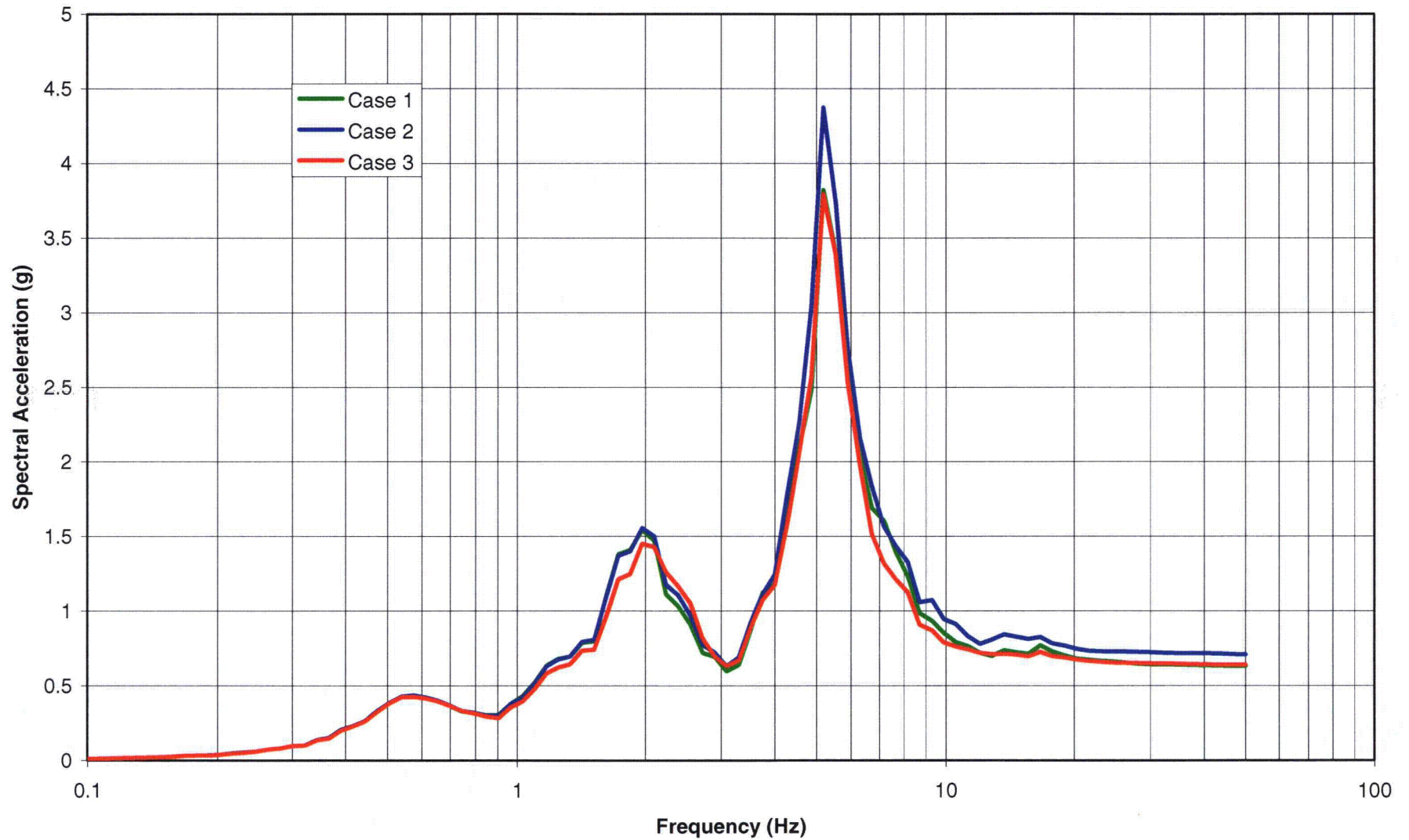


Figure 15
5% Damped ARS in ZZ - Direction
at Node 4412, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

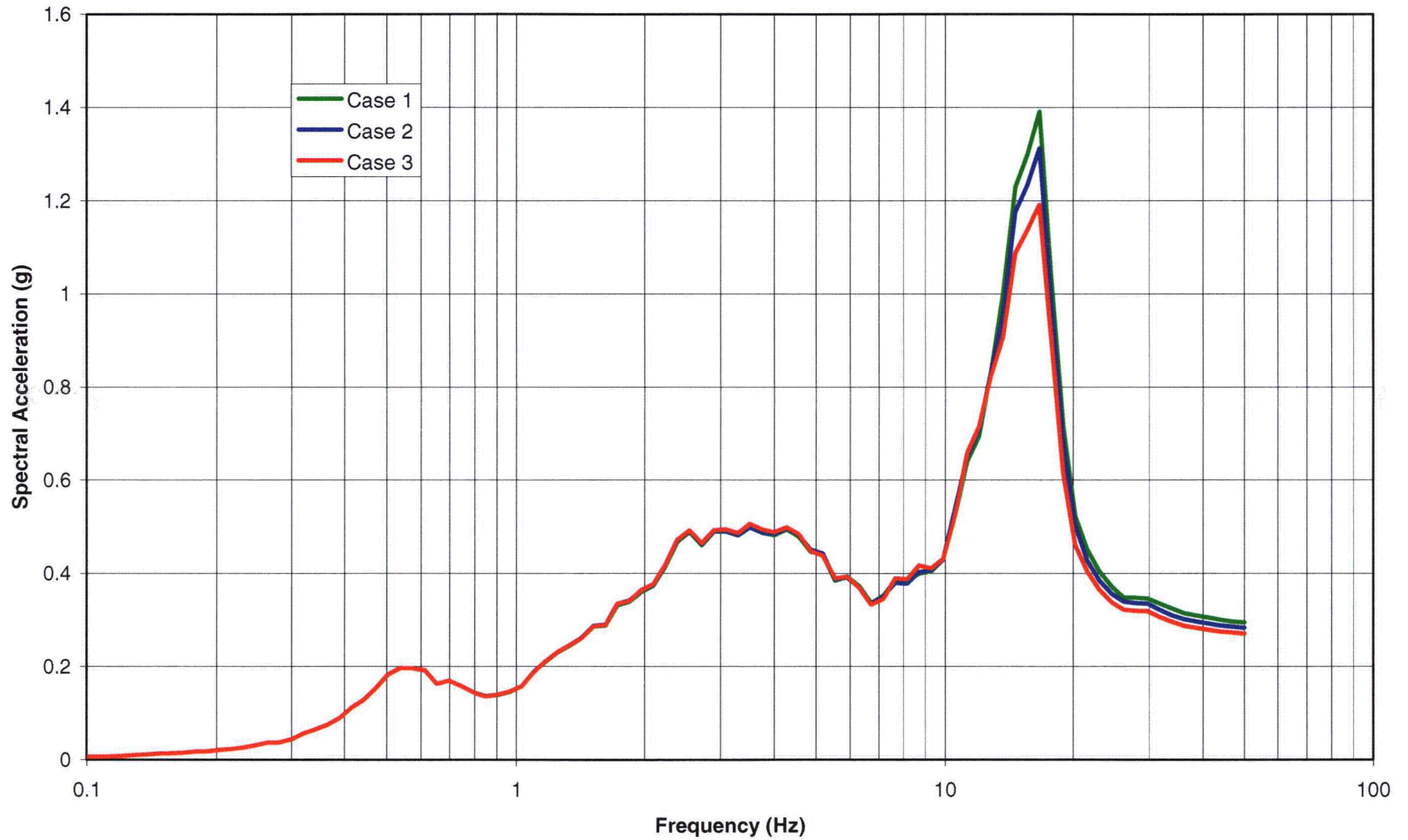


Figure 16
5% Damped ARS in XX - Direction
at Node 4535, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

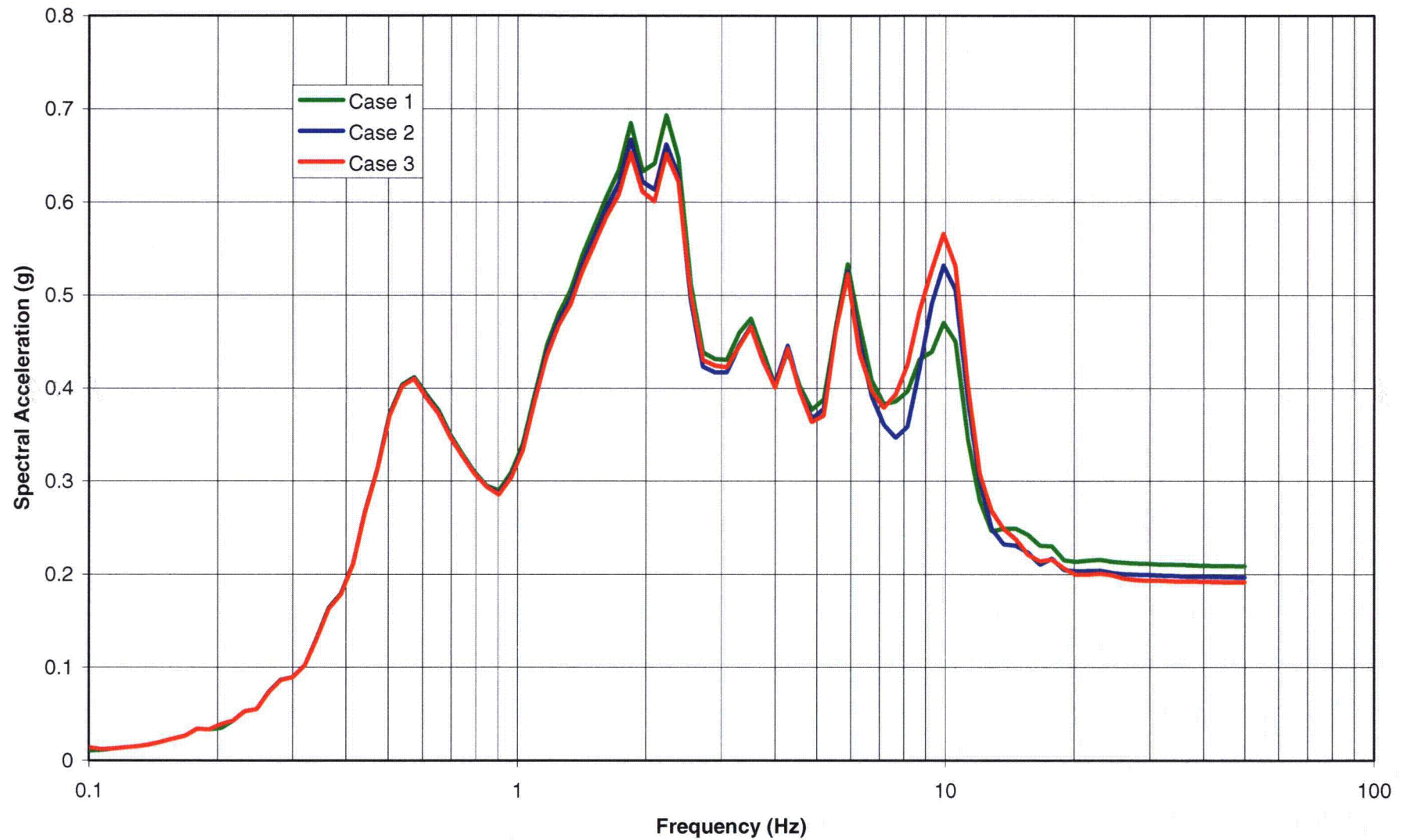


Figure 17
5% Damped ARS in YY - Direction
at Node 4535, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion

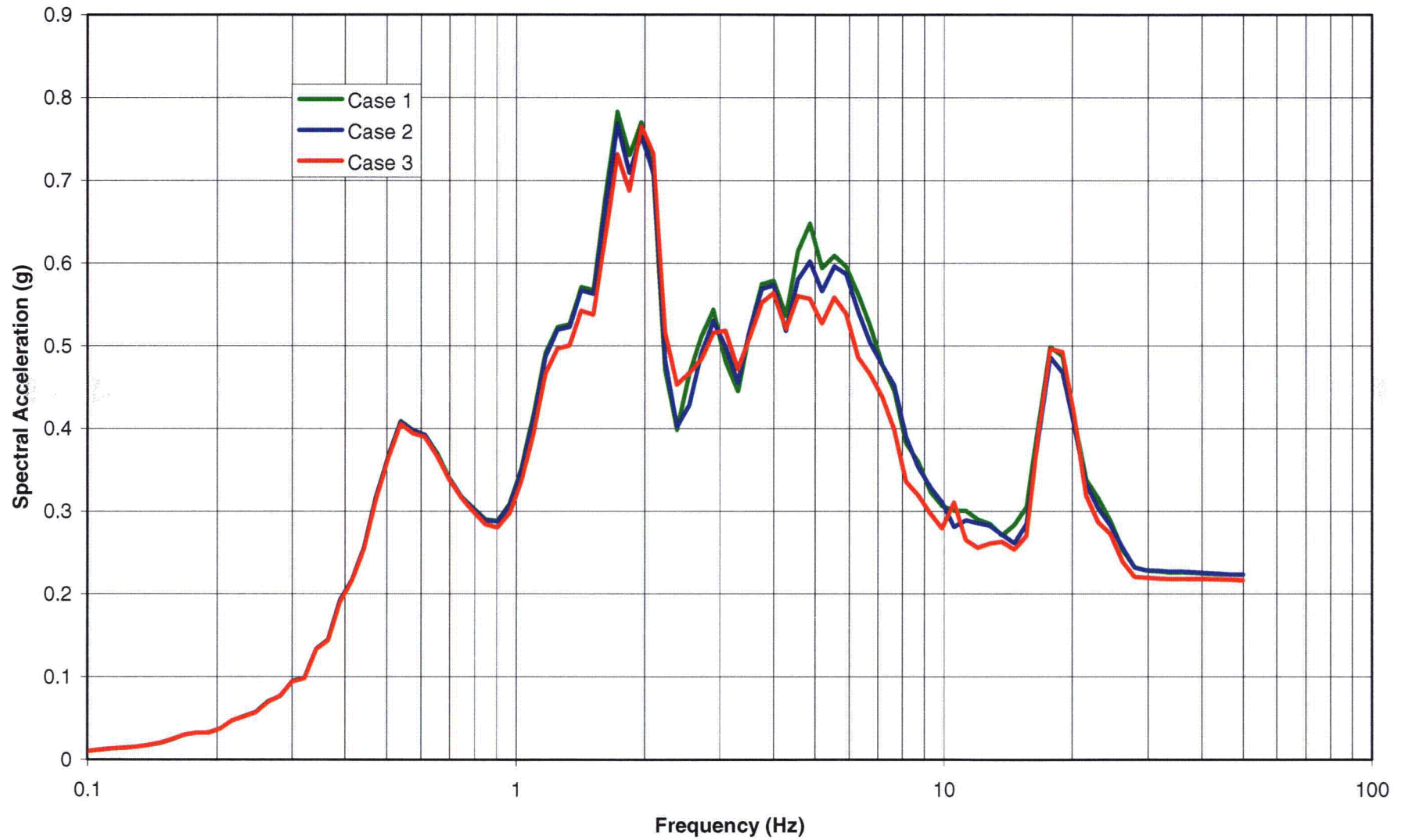
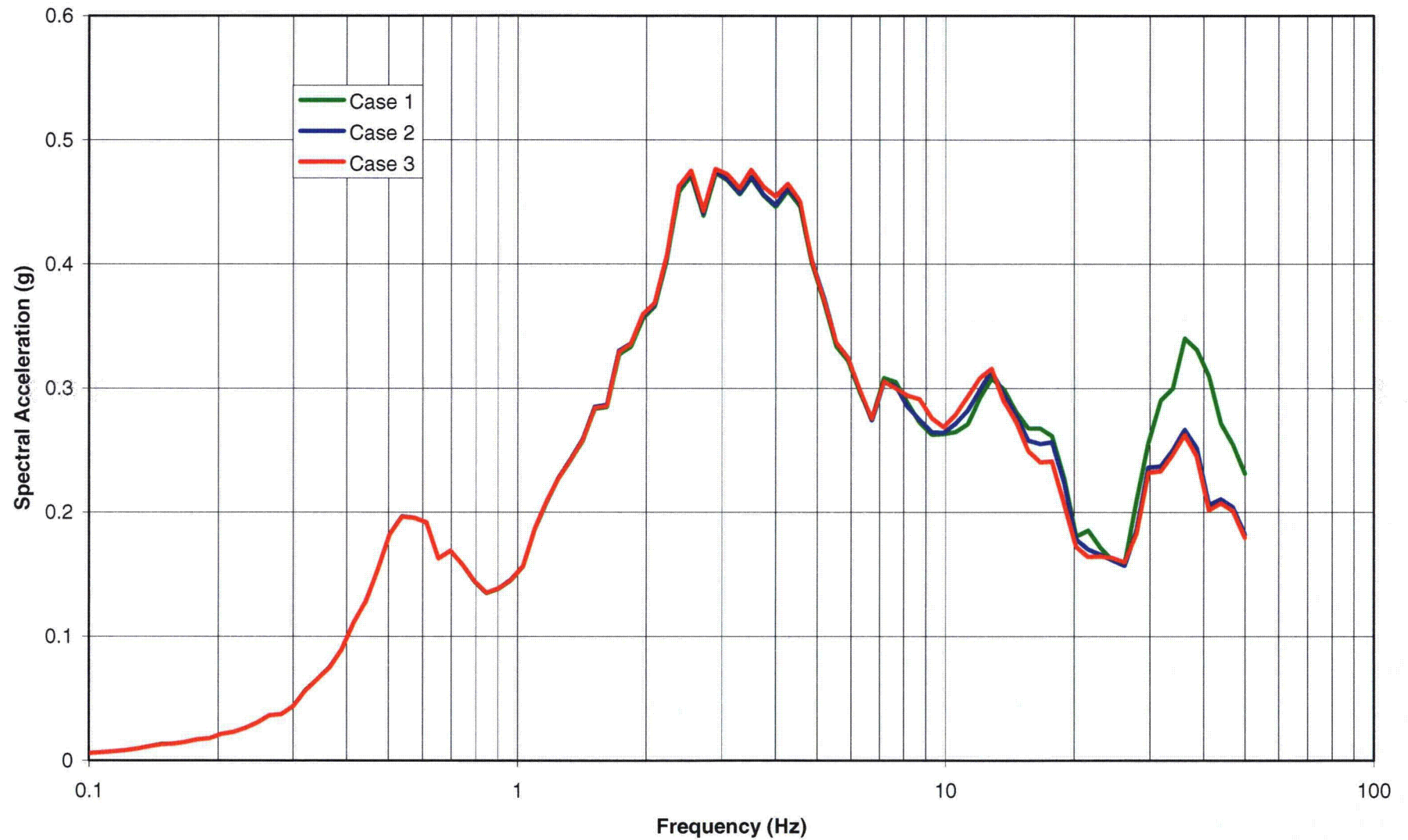


Figure 18
5% Damped ARS in ZZ - Direction
at Node 4535, WEC AP1000 2D Model, Vogtle BE Soil Profile, FIRS Motion



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Enclosure 2

Additional 2D SASSI Supporting Data (Input/Output) Files

(CD Format)