

TRM 3.3.7.2

September 2, 2011

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

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Voluntary Special Report - Seismic Monitoring Instrumentation Actuation

This voluntary Special Report is being submitted due to an actuation of seismic monitoring instrumentation during a seismic event. The event did not exceed the 0.01 g Technical Requirements Manual 3.3.7.2 Seismic Monitoring Instrumentation surveillance requirement 4.3.7.2.2 threshold for reporting.

Technical Requirements Manual 3.3.7.2 Seismic Monitoring Instrumentation surveillance requirement 4.3.7.2.2 states the following:

Each of the above required seismic monitoring instruments which is accessible during power operation and which is actuated during a seismic event greater than or equal to 0.01g, and which does not self-reset, shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 5 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Nuclear Regulatory Commission pursuant to Specification 6.9.2 of the Technical Specifications within 10 days describing the magnitude, frequency spectrum and resultant effect upon unit features important to safety.

Seismic Event Description

On Tuesday, August 23, 2011, Unit 1 and Unit 2 were operating at full power when the "Seismic Monitor System Recording Activated" alarm annunciated among numerous other alarms. Also, the licensed operators in the main control room felt the vibrations. The licensed operators entered procedure SE-5, Earthquake.

Seismic Event Magnitude

The magnitude of the earthquake of August 23, 2011 was 5.8 (Moment Magnitude) at the epicenter in Mineral, Virginia.

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The Peak Ground Acceleration values (See Attachment 1) recorded for the Primary Containment Foundation Sensor Array (XE-VA-102) located on the Unit 1 Elevation 177' HPCI Pump Room floor were:

Longitudinal Axis = -0.0049 g
Vertical Axis = -0.0061 g
Transverse Axis = -0.0048 g

The OBE criteria was not exceeded (0.075g horizontal and 0.050g vertical)

Seismic Event Frequency Spectrum

The spectral acceleration analysis was performed by the Seismic Monitoring System response spectrum analyzer (XR-VA-109) and reviewed by Engineering. The operating basis design response spectrum was not exceeded. Attachment 2 illustrates that the response spectra generated from the ground motion time history (solid line discernable from the x-axis) was significantly lower than the operating basis design limit (dashed-line).

Resultant effect upon unit features important to safety

Limerick safety system inspections and accessible area walkdowns were performed in accordance with station event response guidelines, severe weather and natural disaster guidelines and post transient walkdown procedures. No indications of adverse effects on features important to safety were identified. Event identification and actions taken are documented in the Limerick Corrective Action Process system under Issue Report 1254561.

There are no regulatory commitments contained in this letter.

If you have any questions, please contact John Hunter at (610) 718-3400.

Sincerely,



William F. Maguire
Vice President – Limerick Generating Station
Exelon Generation Company, LLC

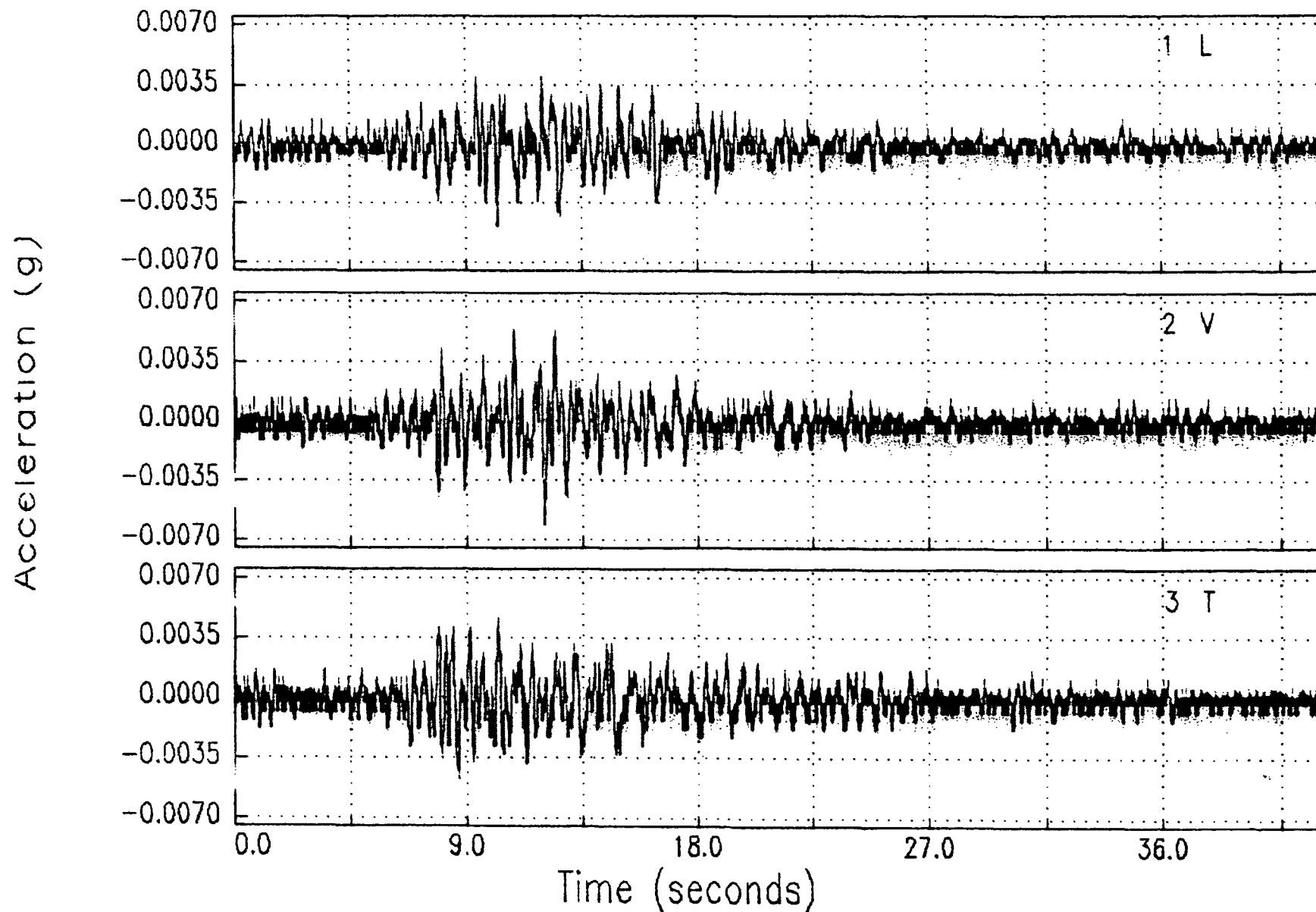
Attachment 1 Primary Containment Foundation Peak Acceleration
Attachment 2 Primary Containment Foundation Frequency Spectrum

cc: Administrator, Region I, NRC
NRC Senior Resident Inspector, Limerick

Attachment 1
Primary Containment Foundation Peak Acceleration

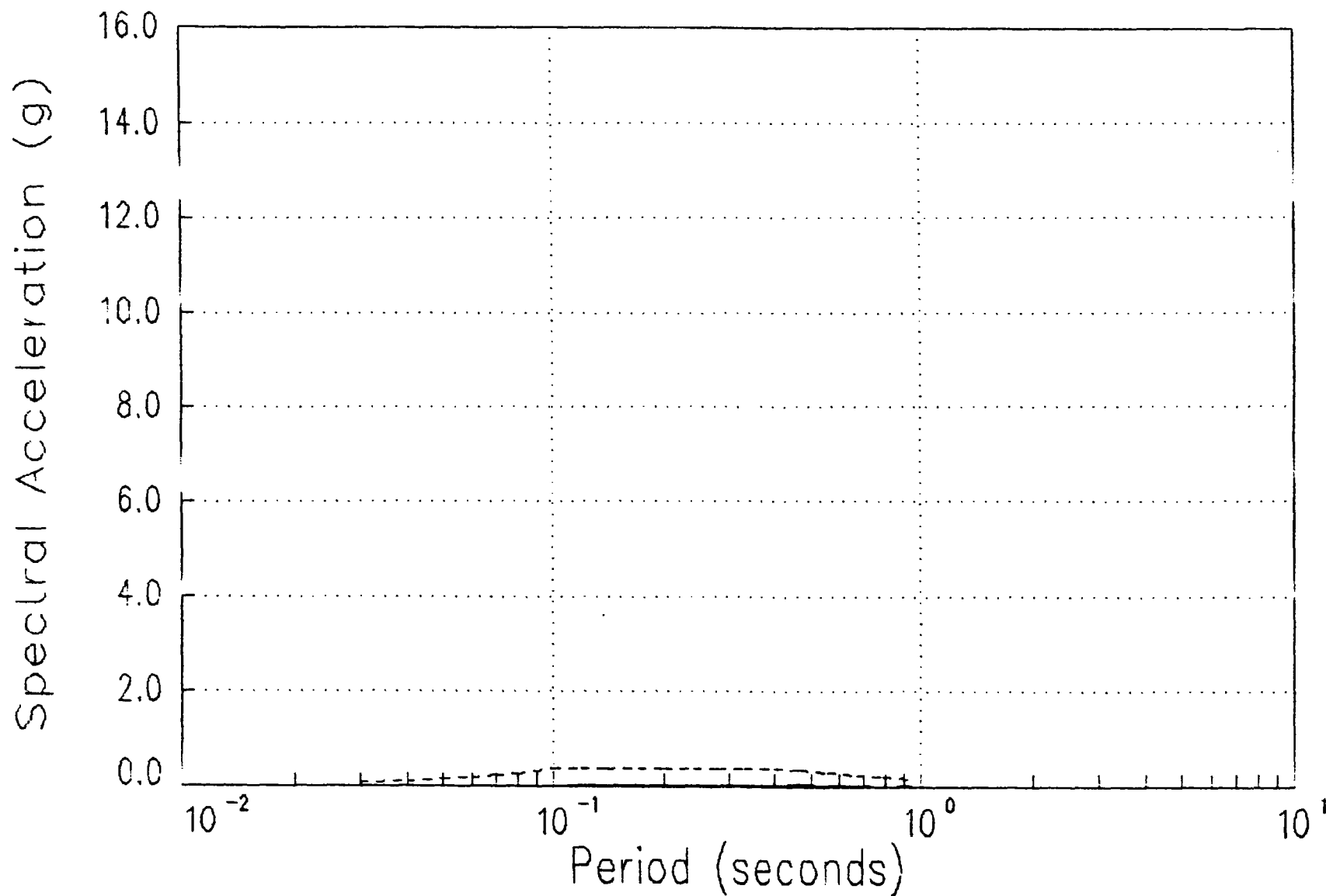
RECORDER A (S/N 31241) PEAKS (g): 1: -0.0049 2: -0.0061 3: -0.0048

Event #002: 08/23/2011 12:54:13 PRIMARY CONTAINMENT FOUNDATION



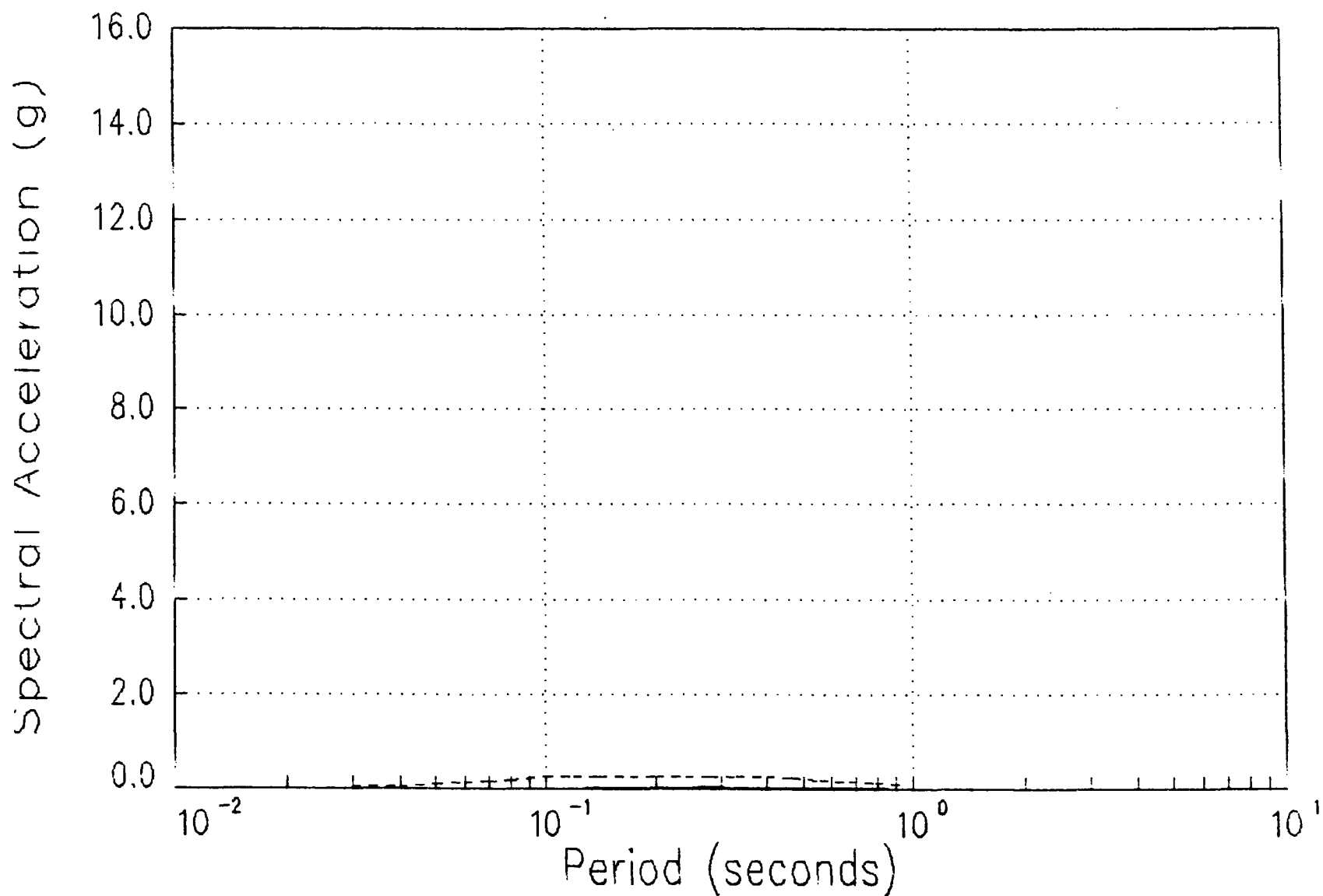
Attachment 2
Primary Containment Foundation Frequency Spectrum

RECORDER A-1: L CAV = 0.000 g-s, Peak PSA = 0.039 g
08/23/2011 12:54:13 PRIMARY CONTAINMENT FOUNDATION



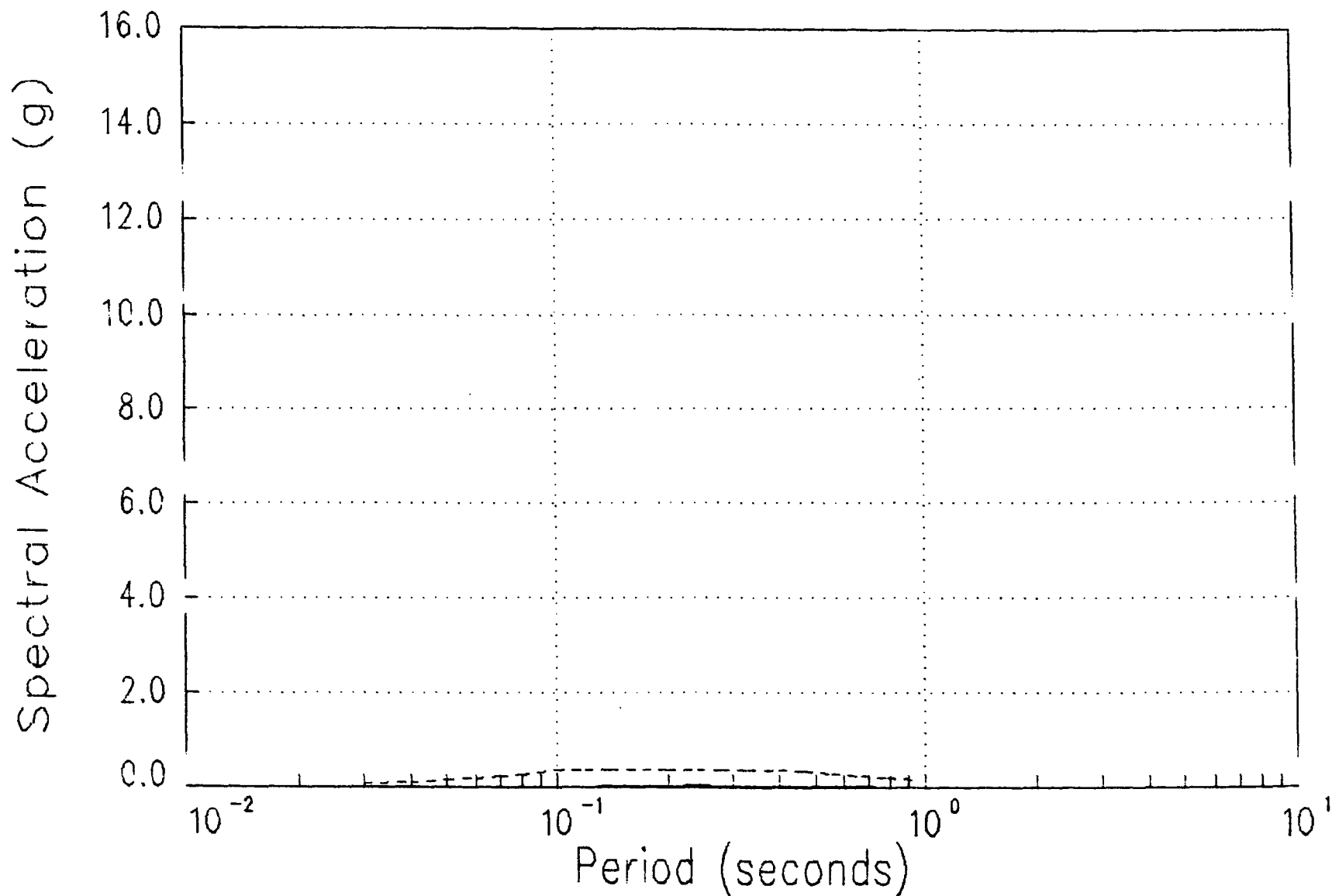
OBET = 0.052 g, CAV_T = 0.160 g-s, DAMP = 0.5%

RECORDER A-2: V CAV = 0.000 g-s, Peak PSA = 0.061 g
08/23/2011 12:54:13 PRIMARY CONTAINMENT FOUNDATION



OBE = 0.035 g, CAV = 0.160 g-s, DAMP = 0.5%

RECORDER A-3: T CAV = 0.000 g-s, Peak PSA = 0.032 g
08/23/2011 12:54:13 PRIMARY CONTAINMENT FOUNDATION



OBE_T = 0.052 g, CAV₁ = 0.160 g-s, DAMP = 0.5%