1 of 1

GENERAL VIBRATION MONITORING

Utility Building, August 1992

by

J. A. Jendrzeczyk, M. W. Wambsganss, and R. K. Smith

This vibration data was generated from measurements made on 8/12/92. The contents are self explanatory. They are baseline measurements and no exceptionally large vibration amplitude or response was observed.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

The submitted manuscript has been authored by a contractor of the U. S. Government under contract No. W-31-109-ENG-38. Accordingly, the U. S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U. S. Government purposes.

MASTER

APS VIBRATION MONITORING

Location: Utility Building/Floor & chiller pad

Date: 8/12/92

Time: 4:00–8:00 PM

File #: 1

Objective: To measure baseline/quiet response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u> x </u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	393C <u> x </u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u> x </u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Floor	N, wall	100	38 nm
2	Floor	E, wall	100	38 nm
3	Floor	Vertical	100	38 nm
4	Chiller pad	N, wall	100	38 nm
5	Chiller pad	W, wall	100	38 nm
6	Chiller pad	Vertical	100	20 nm
7				

Comments/Conclusions:

No large abnormal response observed. Chiller pad tended to average or smooth out the floor response.

Condition 1, File1

Utility Building, File 1, (4-100 Hz)

Utility Building, File 1, (4-100 Hz)

1-FILE 2

File 1

APS VIBRATION MONITORING

Location: Utility Building/Pump isopad & base

Date: 8/12/92

Time: 4:00-8:00 PM

File #: 2

Objective: To measure baseline/quiet response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u>x</u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	393C <u>x</u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u>x</u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Mass	N, wall	100	38 nm
2	Mass	E, wall	100	38 nm
3	Mass	Vertical	100	38 nm
4	Base	N, wall	100	38 nm
5	Base	W, wall	100	38 nm
6	Base	Vertical	100	20 nm
7				

Comments/Conclusions:

No large abnormal response observed. Isopad mass tended to average or smooth out the floor response.

Condition 2, File 2

Utility Building, File 2, (4-100 Hz)

Utility Building, File 2, (4-100 Hz)

UTIL 2 - FILE 2

FILE 2

APS VIBRATION MONITORING

Location: Utility Building/Floor & NW Pit floor

Date: 8/12/92

Time: 4:00–8:00 PM

File #: 3

Objective: To measure baseline/quiet response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u>x</u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	399C <u>x</u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u>x</u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Pit floor	N, wall	100	38 nm
2	Pit floor	E, wall	100	38 nm
3	Pit floor	Vertical	100	38 nm
4	Floor	N, wall	100	38 nm
5	Floor	W, wall	100	38 nm
6	Floor	Vertical	100	20 nm
7				

Comments/Conclusions:

No large abnormal response observed. Floors appeared to be decoupled.

Condition 3, File 3

Utility Building, File 3, (4-100 Hz)

Utility Building, File 3, (4-100 Hz)

File 3 - File 2

File 3

APS VIBRATION MONITORING

Location: Utility Building/Pump pit floor & pump base

Date: 8/12/92

Time: 4:00-8:00 PM

File #: 4

Objective: To measure baseline/quiet response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u>x</u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	889C <u>x</u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u>x</u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Pit floor	N, wall	100	38 nm
2	Pit floor	E, wall	100	38 nm
3	Pit floor	Vertical	100	38 nm
4	Pump base	N, wall	100	38 nm
5	Pump base	W, wall	100	38 nm
6	Pump base	Vertical	100	20 nm
7				

Comments/Conclusions:

Although no large abnormal response was observed, the pump base amplified the 30 Hz response peak in the E wall and vertical directions.

Condition 4, File 4

Utility Building, File 4, (4-100 Hz)

Utility Building, File 4, (4-100 Hz)

DATA 4 - FILE 2

File 4

APS VIBRATION MONITORING

Location: Utility Building/Utility building floor & soil

Date: 8/12/92

Time: 4:00-8:00 PM

File #: 5

Objective: To measure floor/soil coupling

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u> x </u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	393C <u> x </u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u> x </u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Soil	N, wall	100	38 nm
2	Soil	E, wall	100	38 nm
3	Soil	Vertical	100	38 nm
4	Floor	N, wall	100	38 nm
5	Floor	W, wall	100	38 nm
6	Floor	Vertical	100	20 nm
7				

Comments/Conclusions:

The Utility building floor attenuates the soil response by a factor of approximately 2, primarily in the horizontal directions. A large portion of the soil response is due to the 30 Hz component, presumed to be generated by an unbalanced AC condenser fan located on the west side of Building 330.

Condition 5, File 5

Utility Building, File 5, (4-100 Hz)

Utility Building, File 5, (4-100 Hz)

WLS - F11E2

File 5

APS VIBRATION MONITORING

Location: Utility Building floor & emergency generator pad

Date: 8/12/92

Time: 4:00-8:00 PM

File #: 6

Objective: To measure floor/emergency generator pad baseline response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u>x</u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	889C <u>x</u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u>x</u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Gen. pad	N, wall	100	38 nm
2	Gen. pad	E, wall	100	38 nm
3	Gen. pad	Vertical	100	38 nm
4	Floor	N, wall	100	38 nm
5	Floor	W, wall	100	38 nm
6	Floor	Vertical	100	20 nm
7				

Comments/Conclusions:

The generator pad tends to attenuate the floor motion. No abnormal frequency response was observed.

Condition 7, File 6

Utility Building, File 6, (4-100 Hz)

Utility Building, File 6, (4-100 Hz)

FILE 7-FILE 2

FILE 6

APS VIBRATION MONITORING

Location: Utility Building floor & South pump pit floor

Date: 8/12/92

Time: 4:00-8:00 PM

File #: 7

Objective: To measure floor/pit floor baseline response

Site/Location Conditions: Site quiet, rain

Instrumentation:

<u>Storage Device:</u>	<u>Transducer:</u>	<u>Mount:</u>
FM tape <u>x</u>	S-500 <u> </u>	Single <u> </u>
On line <u> </u>	393C <u>x</u>	Biaxial <u> </u>
Other <u> </u>	Other <u> </u>	Triaxial <u>x</u>

Orientation and Identification:

<u>Ch. #</u>	<u>Acc. Loc.</u>	<u>Orientation</u>	<u>Scale/Range</u>	<u>Approx. Noise Floor</u>
1	Pit floor	N, wall	100	38 nm
2	Pit floor	E, wall	100	38 nm
3	Pit floor	Vertical	100	38 nm
4	Floor	N, wall	100	38 nm
5	Floor	W, wall	100	38 nm
6	Floor	Vertical	100	20 nm
7				

Comments/Conclusions:

A small amount of 30 Hz is present on all channels, but is considerably smaller than in file 5. Basically, no abnormal response is observed.

Condition 8, File 7

Utility Building, File 7, (4-100 Hz)

Utility Building, File 7, (4-100 Hz)

4.71L8-FILE 2

File 7

**DATE
FILMED**

11 / 29 / 93

END