Docket No. 50-213
B14881

Attachment B

Haddam Neck Plant

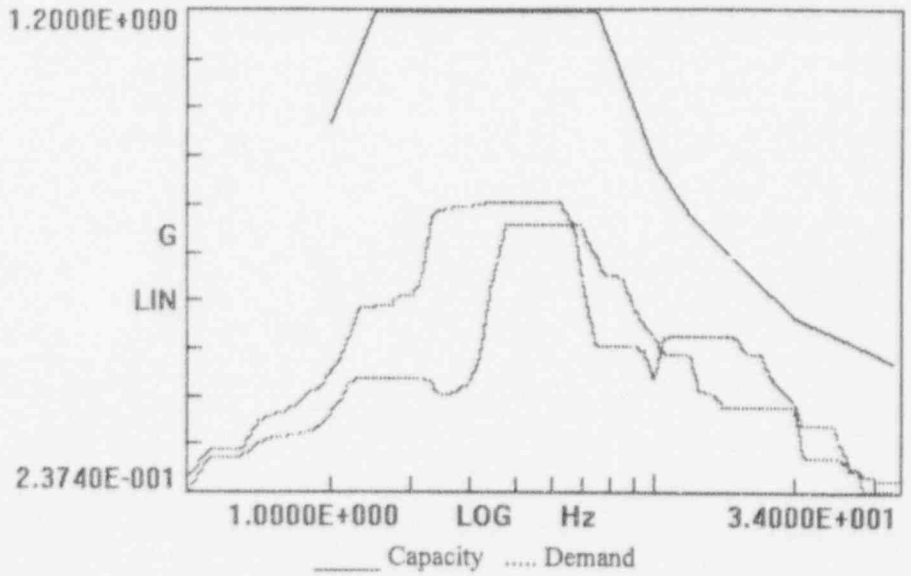
Walkdown Summary Report
Replacement Pages

June 1994

NUSCO CONNECTICUT YANKEE		GIP Rev 2, Corrected, 2/14/92 Sheet 1 of 1
ID : CY-CONT		
Description : CY- CONTAINMENT TOP LEVEL		
Building : CE	Floor El. : 48.50	Room, Row/Col : PRESSURIZER TOP

SEISMIC CAPACITY VS DEMAND

1.	Elevation where equipment receives seismic input	48.50
2.	Elevation of seismic input below about 40' from grade (grade = 0.50)	N/A
3.	Equipment has fundamental frequency above about 8 Hz (est. frequency =)	N/A
4.	Capacity based on: 1.50 * Bounding Spectrum	
5.	Demand based on: 1.00 * Conservative Design Floor Response Spectra	

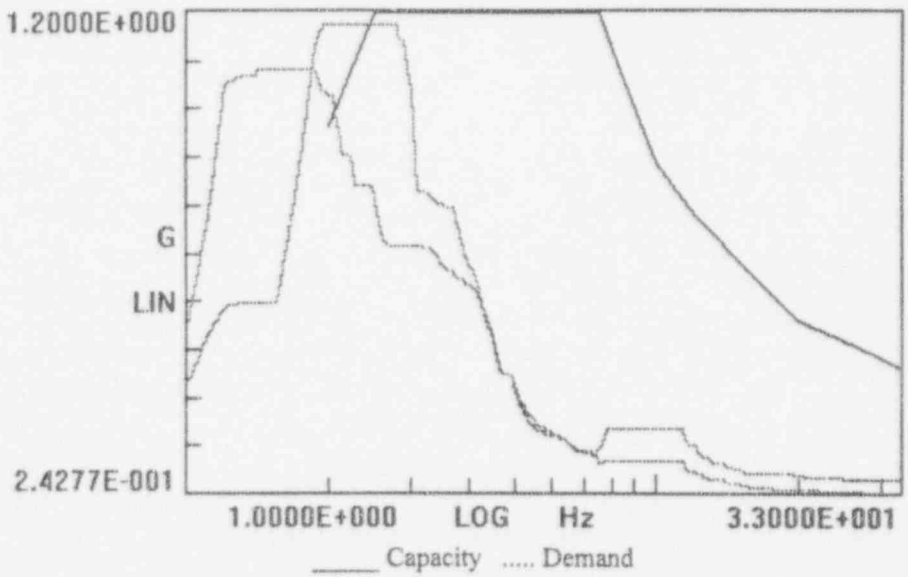


	File	Record
Capacity	D:\GIP\GIP\spectra.des	Label|Bounding Spectrum
Demand 1	D:\GIP\PROJ0025\spectra.des	UNIT|CY|BLDG|Containment|ELEV|40.00|LOC||DIR|N/S|ID|CONT040T
Demand 2	D:\GIP\PROJ0025\spectra.des	UNIT|CY|BLDG|Containment|ELEV|40.00|LOC||DIR|E/W|ID|CONT040R

NUSCO CONNECTICUT YANKEE		GIP Rev 2, Corrected, 2/14/92 Sheet 1 of 1
'D : CY-MCR		
Description : CY - MAIN CONTROL ROOM		
Building : CB	Floor El. : 59.50	Room, Row/Col : MAIN CONTROL ROOM

SEISMIC CAPACITY VS DEMAND

1.	Elevation where equipment receives seismic input		59.50
2.	Elevation of seismic input below about 40' from grade (grade = 21.50)		N/A
3.	Equipment has fundamental frequency above about 8 Hz (est. frequency =)		N/A
4.	Capacity based on:	1.50 * Bounding Spectrum	
5.	Demand based on:	1.00 * Conservative Design Floor Response Spectra	



	File	Record
Capacity	D:\GIP\GIP\spectra.des	Label|Bounding Spectrum
Demand 1	D:\GIP\PROJ0025\spectra.des	UNIT|CY|BLDG|Turbine/Service|ELEV|59.50|LOC|L9|DIR|N/S|ID|TB0 59L9N
Demand 2	D:\GIP\PROJ0025\spectra.des	UNIT|CY|BLDG|Turbine/Service|ELEV|59.50|LOC|L9|DIR|E/W|ID|TB0 59L9E

COMMENTS

Capacity Basis - Component reference spectra envelops conservative floor response spectra for frequency greater than 2 Hz, component frequency is significantly higher than 2 Hz therefore the non enveloping region is inconsequential.

Rev. 1

Seismic Evaluation Report for Connecticut Yankee
Attachment G - Outlier Seismic Verification Sheet (OSVS)

Table of Contents:

OUTLIER SEISMIC VERIFICATION SHEET (OSVS)		GIP Rev 2, Corrected 2/14/92 Sheet 1 of 1
ID : TK-25-1A (Rev. 0)	Class : 21. Tanks and Heat Exchangers	
Description : DWST		
Building : YD	Floor El. : 21.50	Room, Row/Col : OTSD RCA

1. OUTLIER ISSUE DEFINITION - Tanks and Heat Exchangers

a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

Shell Buckling	
Anchor Bolts and Embedment	X
Anchorage Connections	X
Flexibility of Attached Piping	
Other	

b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Tank did not meet screening guideline of the GIP.

2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

a. Defined proposed method(s) for resolving outlier.

Perform detail analysis using acceptance criteria consistent with GIP methodology.

b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

3. COMMENTS

4. CERTIFICATION:

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirments for this item of equipment to be verified for seismic adequacy:

Approved by: _____ Date: 6/8/94

_____ 6.10.94

_____ 6.10.94

OUTLIER SEISMIC VERIFICATION SHEET (OSVS)		GIP Rev 2, Corrected 2/14/92 Sheet 1 of 1
ID : TK-20-1A (Rev. 0)	Class : 21. Tanks and Heat Exchangers	
Description : PWST		
Building : YD	Floor El. : 21.50	Room, Row/Col : INSD RCA

1. OUTLIER ISSUE DEFINITION - Tanks and Heat Exchangers

a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

Shell Buckling	
Anchor Bolts and Embedment	X
Anchorage Connections	X
Flexibility of Attached Piping	
Other	

b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Tank did not meet screening guideline of the GIP.

2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

a. Defined proposed method(s) for resolving outlier.

Perform detail analysis using acceptance criteria consistent with GIP methodology.

b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

3. COMMENTS

4. CERTIFICATION:

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirments for this item of equipment to be verified for seismic adequacy.

Approved by: _____ Date: 6/8/94

A Salter 6.10.94

C. M. Abu Taudus 6.10.94

OUTLIER SEISMIC VERIFICATION SHEET (OSVS)		GIP Rev 2, Corrected 2/14/92 Sheet 1 of 1
ID : TK-4-1A (Rev. 0)	Class : 21. Tanks and Heat Exchangers	
Description : RWST		
Building : YD	Floor El. : 21.50	Room, Row/Col : INSD RCA

1. OUTLIER ISSUE DEFINITION - Tanks and Heat Exchangers

a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

Shell Buckling	
Anchor Bolts and Embedment	X
Anchorage Connections	X
Flexibility of Attached Piping	
Other	

b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Tank did not meet screening guideline of the GIP.

2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

a. Defined proposed method(s) for resolving outlier.

Perform detail analysis using acceptance criteria consistent with GIP methodology.

b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

3. COMMENTS

4. CERTIFICATION:

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirments for this item of equipment to be verified for seismic adequacy:

Approved by: _____ Date: 6/8/94

_____ 6.10.94

_____ 6.10.94

NUSCO Connecticut Yankee - A-46 project
Peer Review Summary

Attachment A7

ID	PEER REVIEW DESCRIPTION	A-46 DISPOSITION	STATUS
BA-MOV-349	Channel type support coped around nuts of motor operator making the valves an independent support.	Yoke stress are within the 3g check. Frame around valve is recommended to be removed and is tracked by an OSVS. Item was also noted by the SRT prior to the peer review.	OSVS
BA-MOV-386	Channel type support coped around nuts of motor operator making the valves an independent support.	Yoke stress are within the 3g check. Frame around valve is recommended to be removed and is tracked by an OSVS. Item was also noted by the SRT prior to the peer review.	OSVS
MCC8-6	Concern on diffuser washer shearing off fire piping nozzle directly above MCC.	Fire piping is an IPEEE concern. Item was also noted by the SRT prior to the peer review. This item is being tracked by IPEEE for resolution.	IPEEE
E-4-1A, B	Concern on CCW Heat Exchanger will act as an anchor for the service water piping, and anchorage edge distance.	Detailed analysis was performed on CCW Hx and the associated piping; the Hx and anchorage were shown to be adequate, reference ABB Impell calc 0024-099-CCWHX. Item was also noted by the SRT prior to the peer review.	Resolved
FL-53-1A, 1B	Shaft/driver misaligment possible due to anchor and piping design.	Adams Filters have been removed from the SSEL since it is no longer in the safe shutdown path.	Resolved
F-17-1 to 4	Unknown anchorage.	Containment CAR fans have been removed from the SSEL since it is no longer in the safe shutdown path.	Resolved
P-37-1A	Grating above Service Water Pump may not be secured.	Grating inspected during final walkdown and is judged to be acceptable by SRT since it is well confined.	Resolved
P-4-1A	Grating above Fire Pump may not be secured.	Grating inspected during final walkdown and is judged to be acceptable by SRT since it is well confined.	Resolved
P-5-1A	Fuel oil line from diesel oil tank passes through block wall, check piping seismic integrity.	Piping issues are excluded from A-46 but are being addressed in the IPEEE. Block wall in that area was excluded from 80-11 evaluations since wall does not support safety related commodities and is not in the vicinity of safety equipment.	IPEEE
T-484, 485, 496, 497	Verify coils are properly anchored and verify enough internal slack for cabling.	Coil caveats have been verified during final walkdown and are satifactory. Final SRT walkdown was subsequent to peer review in view of component outage schedule.	Resolved
BT-1A	Gap between battery cells.	Recommended installing crushable foam or closing gaps between railing and battery cells. An OSVS is used to track this outlier. Item was also noted by the SRT prior to the peer review.	OSVS
BUS 1-2	Ceramic resistors on top of the bus are not in earthquake experience database, outlier.	This bus is supplied by offsite power only and will therefore not be available for A-46 shutdown purposes. Therefore this particular item is not needed for A-46.	Resolved
EG-2A, B	Lower bound seismic weaknesses appear to be controlled by the fuel oil and air stating piping.	Recommended air starting and fuel oil piping be evaluated. This is tracked via an OSVS. Item was also noted by the SRT prior to the peer review.	OSVS
EG-2A, B	The sight glass on the lubrication expansion tank may have low seismic capacity.	Sight glass is relatively short and is mounted rigidly to the tank wall. Not a concern. A note to that effect was added to the SEWS to document the SRT's evaluation.	Resolved
Essential Relays	If bad actor relay is classified because of high freq impact sensitivities it will be necessary to test the relays to the response levels anticipated in the higher freq ranges or demostrate that potential seismic interaction concerns are not present.	Bad actor relays and relays without capacity information have been identified and are tracked by OSVS.	OSVS
IV-1C, 1D	The spray screen above the unit is coped to accommodate a spatial interaction with supports on the wall. There is a 1/4" gap between the support and the inverter shields.	Estimate F to B freq > 15Hz and S to S freq > 8Hz therefore 1/4" gap is sufficient. Item was also noted by the SRT prior to the peer review.	Resolved

NUSCO Connecticut Yankee - A-46 project
Peer Review Summary

Attachment A8

ID	PEER REVIEW DESCRIPTION	A-46 DISPOSITION	STATUS
TK-4-1A	Concern regarding the depth of the fill line piping inside the RWST to preclude a line break outside of the RWST siphoning the water from the tank.	The line in question is an overflow line and is thus empty.	OSVS
TK-20-1A	Storage boxes stacked 2-3 high in vicinity of the tank may cause interaction.	The stacked containers are more than 4 ft away and were judged not capable of causing an adverse impact to the tanks, however, not stacking containers was recommended. This has been documented on the SEWS.	OSVS
TK-62-1A	Bolt chair not of perferred design and may govern the seismic capacity.	TK-62-1A has been removed from the SSEL since it is no longer in the safe shutdown path.	Resolved
TK-25-1A	The DWST tank walls should be checked for the local stresses imposed on it by the lateral braces at the top of the shield wall.	Stevenson & Associates performed a detailed evaluation of the tank including the effect of local stresses. The tank HCLPF was determined to be greater than 0.17g (SSE)	OSVS
SI-MOV-24	Valve weight may result in excess tank wall or nozzle stresses.	The support outboard of valve appears to accomodate vertical loads and associated nozzle loads were judged acceptable.	Resolved
Control Room	Individual ceiling acoustic panel may fall.	The ceiling panels are judged small and lightweight such that they will not injure occupants of the control room or impede access access to the control boards themselves. The lights are safety wired.	Resolved
Control Room	Instrumentation drawers in the main control boards are sometimes not screwed in (fasterners missing)	Instrumentation drawers are not located in the vicinity of the safe shutdown equipment or essential relays. All SSEL instrumentation were verified by SRT and verified to have vendor supplied hardware.	Resolved
MCC 9, 10	Check to ensure anchorage free edge distance reduction factors are considered, and the grout pad is dowled properly to the concrete floor or the anchorage embedments extend into the structural slab.	MCC 9 and 10 have been removed from the SSEL since it is no longer in the safe shutdown path.	Resolved
General	At various locations in the plant grating, which may pose an interaction hazard is not always positively restrained (clipped or anchored) to the structural.	For SSEL components the SRT have noted all such instances. No credible interactions were identified for SSEL components. (for example, see P-37-1A and P-4-1A)	Resolved
General	Ductwork throughout the plant that is anchored into concrete should be investigated to determine the type and capacity of the anchor used.	Ductwork interaction was identified for the LV SWGR. Ductwork integrity was identified as indeterminate and is being evaluated by IPEEE. This item was also noted by the SRT prior to the peer review and is tracked by an OSVS. (see SEWS / OSVS for BUS 1-4)	OSVS / IPEEE

LIST OF ACTION ITEMS GENERATED BY USI - A46

Attachment A14

OUTLIER	PROPOSED FIX	ACTION REQUIRED	STATUS
1. The strap securing air bottle 278A to the building is loose. PRVs 278 and 279 are mounted on the air bottle and connected to a pressure indicator which may be impacted by tools (wrenches, caps) falling from above.	i. Tighten Strap. ii. Remove unsecured hardware from the area.	a. Maintenance AWO, with Memo Closeout. b. Housekeeping procedure change.	a. Work done, verification walkdown required. b. Review required.
2. SPEC 200 RPS rack sections B1A, B1B, B2A are part of the SSEL. There are unrestrained file cabinets near the south end of this Spec 200 cabinet.	i. Tie down or relocate file cabinets south of the SPEC 200 cabinet. ii. For the long-term, ensure that the house keeping procedure prevents recurrence of this type of spatial interaction.	i. Maintenance AWO. ii. Housekeeping procedure revised to address A-46. PE will review to check whether IPEEE issues are addressed.	i. Cabinets bolted together. Verification walkdown required. ii. Review required.
3. C channel frame restrains movement of valve BA-MOV-349 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe.	Remove/modify the frame to eliminate interference.	a- Maintenance AWO. b- Check why frame was originally installed.	Awaiting approval from Design Engineering to remove frame.
4. C channel frame restrains movement of valve BA-MOV-386 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe. Also need to resolve field installation problems with grout under the stanchion.	i. Remove/modify the frame to eliminate interference. ii. Repair grout.	a- Maintenance AWO to remove frame or repair grout. b- Check why frame was originally installed.	Awaiting approval from Design Engineering to remove frame.
5. Spacing between battery BT-1A cells does not have tight fit.	Install crushable foam between the railing and battery cells or add spacers/shims between the vertical post and side rail to provide snug fit.	Determine if analysis exists to qualify existing configuration. Otherwise, DCN & PDCR required.	To be placed in ISAP program.

NOTES: ① Added to OSVS in May, 1994.

LIST OF ACTION ITEMS GENERATED BY USI - A46

Attachment A15

OUTLIER	PROPOSED FIX	ACTION REQUIRED	STATUS
6. Maintenance crane on top of Buses 1-4,5,6,7 is not secured.	Modify maintenance procedure to tie down the maintenance crane when not in use and insure sufficient clearance between crane and adjacent commodities such HVAC ducts.	Maintenance AWO.	Work done, verification walkdown required.
7. Duct work over Buses 1-4,5,6,7 is supported with unknown type of anchors.	Investigate the overhead duct supports to determine the type and capacity of the concrete anchors used.	a. CY Design Engineering should perform an anchorage evaluation. b. Modify anchorage through DCN & PDCR, if required.	Walkdown and engineering evaluation required. To be placed in ISAP program.
8. Existing cabinets 8DB1A of Diesel Aux. Control Panel (EG-2A) and 9DB1A are not bolted together or to adjacent cabinet 9DB1.	Tie together or provide cushioning between cabinets to preclude any impact.	DCN & PDCR required.	To be placed in ISAP program.
9. Existing cabinets 9DB1A of Diesel Aux. Control panel (EG-2B) and 8DB1A are not bolted together or to adjacent cabinet 9DB1.	Tie together or provide cushioning between cabinets to preclude any impact.	DCN & PDCR required.	To be placed in ISAP program.
10. Valve DA-PRV-27A has loose bolts.	Tighten bolts.	Maintenance AWO.	Work done, verification walkdown required.
11. For diesel engine EG-2A, the overhead crane beam is not secured in place. This creates a potential interaction with the fuel oil line.	Modify appropriate procedures to ensure crane beam does not park in unacceptable position.	Procedure change.	Reviewing procedure.
12. For diesel engine EG-2B, the overhead crane beam is not secured in place. This creates a potential interaction with the fuel oil line.	Modify appropriate procedures to ensure crane beam does not park in unacceptable position.	Procedure change.	Reviewing procedure.

NOTES: ① Added to OSVS in May, 1994.

A46OLNRC.wpd

LIST OF ACTION ITEMS GENERATED BY USI - A46

Attachment A16

OUTLIER	PROPOSED FIX	ACTION REQUIRED	STATUS
13. Three anchors on EDG fuel oil level transmitter LT-1700A are missing.	Replace and tighten anchors.	Holes were found to be damaged. DCN & PDCR required.	Resolution planned by end of next RFO.
14. Anchorage on EDG fuel oil level transmitter LT-1700B is loose.	Tighten anchors.	Holes were found to be damaged. DCN & PDCR required.	Resolution planned by end of next RFO.
15. Maintenance cabinet near CCW pump P-13-1A is only 15" away and is free standing. Dolly cart near P-13-1A is not tied down.	i. Restrain or relocate cabinet and dolly cart. ii. For the longer term, ensure that the housekeeping procedure prevents recurrence of this type of spatial interaction.	i. Maintenance AWO. ii. Housekeeping procedure revised to address A-46. PE will review to check whether IPEEE issues are addressed.	i. Not started. ii. Review procedure.
16. Overhead spare cabling of T-485 transformer is rolled up and may not be secured. This causes a potential interaction concern.	Remove or restrain cabling.	Maintenance AWO.	Work done, verification walkdown required.
17. Starting air and fuel oil piping for Diesel EG-2A are very flexible.	Evaluate Design Basis adequacy of pipe runs. Fragility calculations for IPEEE have been completed and piping is adequate for intent of IPEEE.	None. Complete for A-46 and IPEEE.	Complete.
18. Starting air and fuel oil piping for Diesel EG-2B are very flexible.	Evaluate Design Basis adequacy of pipe runs. Fragility calculations for IPEEE have been completed and piping is adequate for intent of IPEEE.	None. Complete for A-46 and IPEEE.	Complete.

NOTES: ① Added to OSVS in May, 1994.

LIST OF ACTION ITEMS GENERATED BY USI - A46

Attachment A17

OUTLIER	PROPOSED FIX	ACTION REQUIRED	STATUS
19. Various outlier relays consisting of : bad actor relays, relays with no GERS, and relays of unknown make.	a. Perform evaluations to determine if compensating operator actions can be credited for some or all of the relays and if the actions need to be included in the seismic AOPs. b. Resolve seismic issues or replace remaining relays.	a. Review to be performed by a special team (electrical & systems engineers). b. Resolve via type testing and replacement.	Relays required to be replaced will be done so through the ISAP program.
20. Ring-type foundation is used to support the Condensate Storage Tank (TK-25-1B).	Determine adequacy and acceptability of the Tank.	Perform detailed tank analysis.	Analysis complete by S&A. No modifications required. Final CY acceptance required.
21. RWST (TK-4-1A). ①	Determine adequacy and acceptability of the Tank.	Perform detailed tank analysis.	Analysis presently being performed by S&A who feel that no modifications will be required.
22. DWST (TK-25-1A). ①	Determine adequacy and acceptability of the Tank.	Perform detailed tank analysis.	Analysis presently being performed by S&A who feel that no modifications will be required.
23. PWST (TK-20-1A). ①	Determine adequacy and acceptability of the Tank.	Perform detailed tank analysis.	Analysis presently being performed by S&A who feel that no modifications will be required.

NOTES: ① Added to OSVS in May, 1994.