

 NIAGARA MOHAWK NUCLEAR ENGINEERING	CALCULATION COVER SHEET			Page 1 (Next <u>2</u>)
				Total <u>4</u>
				Last <u>B1</u>

NINE MILE POINT NUCLEAR STATION

Unit (1, 2 or 0=Both) : 1

Discipline : STRUCTURAL

 Title
 SCREENING EVALUATION WORK SHEETS FOR TANK 96-35

 Calculation No.
 S0.0SEWS9635

 (Sub)system(s)
 96

 Building
 TB

 Floor Elev.
 261

 Index No.
 S0.0

 Originator(s)
 CARMEN R. AGOSTA

 Checker(s) / Approver(s)
 MOHAMMED ALWI

Rev	Description	Design Change No.	By	Date	Chk	Date	App	Date
00	INITIAL ISSUE	NA	CA	7-22-97	M.A	7-22-97	M.A	7-22-97

Computer Output/Microfilm Filed Separately (Yes / No / NA): NA

Safety Class (SR / NSR / Qxx) : SR

Superseded Document(s) : NONEDocument Cross Reference(s) - For additional references see page(s) : NA

Ref No	Document No.	Doc Type	Index	Sheet	Rev
1	NER-1S-012	NER	---	---	00
2	S0.0SQUGANCHOR	CALC	S0.0	---	00
3	S0.0SEWS9604	CALC	S0.0	---	00

General Reference(s) :

4. GENERIC IMPLIMENTATION PROCEDURE (GIP)
5. NMPC Letter to NRC, File Code NMP1L 1044, dated March 11, 1996

 Remarks :
 NONE

 Confirmation Required (Yes / No) : No
 See Page(s) : _____

 Final Issue Status
 (APP / FIO / VOI) : APP

 File Location
 (Calc / Hold) : Calc

 Operations Acceptance
 Required (Yes / No) : No

 Evaluation Number(s) / Revision : NR
 Copy of Applicability Review Attached (Yes / NR)?NR

 Component ID(s) / EPN(s) / Line Number(s) :
 TANK-96-35
 TANK-96-04

 Key Words : NMP-1, STRUCTURAL, SQUG, SEWS, SEISMIC
 VERIFICATION



11

Nine Mile Point Nuclear Station

Unit: 1

Disposition:

Originator/Date <i>CA</i> / <i>7-22-97</i>	Checker/Date <i>M.A</i> / <i>7-22-97</i>	Calculation No. S0.0SEWS96-35	Revision 00
---	---	----------------------------------	----------------

Ref.

PURPOSE: Document the Screening Evaluation Work Sheets (SEWS) for the DSA/DG#103 START AIR TANK #4, equipment number 96-35.

This SEWS has been prepared as part of the commitment to use the SQUG (GIP) methodology to document the seismic adequacy of SSEL components.

CONCLUSION: Tank-96-35 is similar to Tank-96-04. The anchor analysis is documented in calculation S0.0SEWS9604 for these tanks. This calculation concluded the anchorage can withstand 4.207 times greater the seismic demand. The cinch anchors passed the tightness check for tank 96-35. Therefore, the SQUG outlier for 96-35 is resolved.

ATTACHMENTS

- A. SEWS for Equipment ID Number 96-35
- B. The Outlier Seismic Verification Sheet (OSVS) for Equipment ID Number 96-35



SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: Yes Sheet 1 of 1
ID : 96-35 (Rev. 1)	Class : 21 - Tanks and Heat Exchangers	
Description : DSA/DG #103 START AIR TANK #4		
Building : TB	Floor El. : 261.00	Room, Row/Col : DG 103 RM
Manufacturer, Model, Etc. :		

BASIS : External analysis

ATTACHMENT A
 CALC NO S.O. SEWS 9635
 REVISION 00
 PAGE NO AL

1. The buckling capacity of the shell of a large, flat-bottom, vertical tank is equal to or greater than the demand.	Yes
2. The capacity of the anchor bolts and their embedments is equal to or greater than the demand.	Yes
3. The capacity of connections between the anchor bolts and the tank shell is equal to or greater than the demand.	Yes
4. Attached piping has adequate flexibility to accommodate the motion of a large, flat-bottom, vertical tank.	Yes
5. A ring-type foundation is not used to support a large, flat-bottom, vertical tank.	N/A

IS EQUIPMENT SEISMICALLY ADEQUATE?

Yes

COMMENTS

SRT are W. Djordjevic and C. Agosta - Outlier Evaluation

In Revision 0, these air start tanks were declared outliers because they use Cinch type leaded anchors which are not covered by the GIP.

External analysis 95C2873-C-003 evaluates the anchorage using data developed by Westinghouse Savannah River (referenced in calculation) and shows a HCLPF PGA equal to 0.55g.

Subsequently, bolt tightness checking was conducted on ¹⁸⁰ ~~111~~ accessible Cinch anchor installations with only ^{two} ~~one~~ failure to hold tightness. Since this failure rate is ~~less~~ ^{less} than 1% and the HCLPF is equivalent to about a 1% failure rate, no reduction factor is applied to Cinch anchors. CA
6/1/97

Therefore, this equipment is found acceptable for A-46 design basis purposes and the outlier is resolved. The HCLPF remains at 0.55g PGA.

Evaluated by:

W. Djordjevic
C. Agosta

Date:

11/17/95
12/6/95



Niagara Mohawk Power Corporation - Nine Mile Point 1 OUTLIER SEISMIC VERIFICATION SHEET (OSVS)		GIP Rev 2, Corrected 2/14/92 Sheet 1 of 2
ID : 96-35 (Rev. 0)	Class : 21. Tanks and Heat Exchangers	
Description : DSA/DG #103 START AIR TANK #4		
Building : TB	Floor El. : 261.00	Room, Row/Col : DG 103 RM

ATTACHMENT B
 CALC NO SP.0 SEWS 96-35
 REVISION 02
 PAGE NO 01

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	
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).

Air start tanks are anchored to reinforced concrete wall by Cinch (lead) type anchors. Cinch type anchors are not covered by the GIP.

2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

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

Determine realistic bolt load allowables for Cinch type anchors and compare them to the seismic demand loads, or retrofit anchorage.

- 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 requirements for this item of equipment to be verified for seismic adequacy:

Approved by:

Date:

2/11/94
6/13/95

