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 MANGAN, C. V. Niagara Mohawk Power Corp.  
 RECIP. NAME RECIPIENT AFFILIATION  
 ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Forwards responses to NRC questions re changes to FSAR submitted in util 860822 ltr. Encl marked-up pages to FSAR supercedes 860822 submittal. Changes will be included in subsequent FSAR update.

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MEMORANDUM FOR THE RECORD

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September 19, 1986  
(NMP2L 0882)

Ms. Elinor G. Adensam, Director  
BWR Project Directorate No. 3  
U.S. Nuclear Regulatory Commission  
7920 Norfolk Avenue  
Washington, DC 20555

Dear Ms. Adensam:

Re: Nine Mile Point Unit 2  
Docket No. 50-410

The NRC staff forwarded questions to Niagara Mohawk related to changes to the Final Safety Analysis Report which were submitted by our letter dated August 22, 1986 (NMP2L 0851). This letter provides responses to these questions and, where necessary, marked-up pages of the Final Safety Analysis Report. The marked-up pages to the Final Safety Analysis Report are provided in the enclosure of this letter and supercede those that were submitted on August 22, 1986. These changes will be included in a subsequent Final Safety Analysis Report update.

Very truly yours,

*C. V. Mangan*

C. V. Mangan  
Senior Vice President

LL/ps  
2054G  
Enclosure

xc: W. A. Cook, NRC Resident Inspector  
Project File (2)

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
Niagara Mohawk Power Corporation ) Docket No. 50-410  
(Nine Mile Point Unit 2) )

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Senior Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C. V. Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Orangetown, this 19<sup>th</sup> day of September, 1986.

Janis M. Macro  
Notary Public in and for  
Orangetown County, New York

My Commission expires:

JANIS M. MACRO

Notary Public in and for the State of New York  
Qualified in Onondaga County No. 4784555  
My Commission Expires March 31, 1987



Comment 1: In FSAR page 7.1-7, the phrase should be removed to be consistent with SSER2, Section 7.2.2.3 which does not reflect any continuing review of setpoint methodology program by the NRC.

Response 1: Comment accepted. Enclosed is a marked-up page 7.1-7 to the Final Safety Analysis Report (FSAR).

Comment 2a: In Table 421.36-1 (page 1 of 18), no justification provided for deviation from R.G. 1.97 on seismic and environmental qualification for Source Range Flux Level.

Response 2a: These measurement devices are not environmentally qualified for long-term post-accident monitoring. Our letter dated April 1, 1986 (NMP2L 0676) documents our commitments regarding installation of qualified neutron monitoring system. Specifically, we will continue to monitor industry efforts to develop a qualified Neutron Monitoring System for long-term post-accident monitoring. When qualified equipment becomes available, we will install it at Unit 2 by the first refueling following availability, unless we justify to the Nuclear Regulatory Commission that installation of the specific equipment would result in an overall decrease in the safety of the plant. In this case, we will continue our efforts to identify and procure acceptable qualified equipment.

Comment 2b: In Table 421.36-1 (page 6 of 18), no justification provided for deviation from R.G. 1.97 on seismic qualification of primary containment isolation NMS.

Response 2b: The change to Table 421.36-1, sheet 6 for primary containment isolation - NMS is withdrawn. These valves are seismically qualified, as verified from the NSSS seismic qualification master list. Enclosed is a marked-up page to Table 421.36-1, sheet 6, which reflects this information.

Comment 2c: In Table 421.36-1 (page 10 of 18), no justification for deviation from R.G. 1.97 recommendation on containment effluent radioactivity and effluent radioactivity.

Response 2c: The range for the containment effluent radioactivity (2RMS-CAB170) is  $10^{-6}$  to  $10^5$   $\mu$ ci/cc, consistent with FSAR Table 11.5-1 and meets Regulatory Guide 1.97, Rev. 3 requirements.

The range for effluent radioactivity (2RMS-CAB180) should be  $10^{-6}$  to  $10^4$  (not  $10^{-6}$  to  $10^4$ )  $\mu$ ci/cc. The range of  $10^{-6}$  to  $10^4$   $\mu$ ci/cc is consistent with FSAR Table 11.5-1 and meets Regulatory Guide 1.97, Rev. 3 requirements.

Enclosed is a marked-up page to Table 421.36, sheet 10, which reflects this information.





Comment 2d: In Table 421.36-1 (page 13 of 18), no justification provided for deviation from R.G. 1.97 for RHR Heat Exchanger Outlet Temperature - A and B.

Response 2d: Instruments 2RHS\*TE13A, B measure RHR heat exchangers outlet temperature, which provides an indication of RHR system operation and its effectiveness in removing heat from the primary containment. These instruments are seismically qualified but are not environmentally qualified. These instruments perform no active safety function, thus do not need to be environmentally qualified. Other instruments, provided in accordance with Regulatory Guide 1.97, provide the operator with sufficient information to verify the RHR system is operating and effectively removing heat from the primary containment. These instruments are:

- a. RHR system flow (2RHS\*FT14A, B)
- b. Cooling water flow to ESF components exchangers (2SWP\*FT13A, B)
- c. Drywell/suppression chamber pressure
- d. Drywell atmosphere temperature
- e. Suppression pool water temperature
- f. Drywell spray header flow
- g. Cooling water temperature to ESF components (service water supply temperature - 2SWP\*TE31A, B).

It is therefore concluded that adequate indication of RHR system operation is provided without the instruments 2RHS\*TE13A, B; thereby meeting the intent of Regulatory Guide 1.97, Rev. 3. Enclosed is a marked-up page to Table 421.36-1, sheet 13, which indicates that the instruments 2RHS\*TE13A, B are seismically qualified but not environmentally qualified. This change corrects the change previously submitted by our letters dated January 20, 1986 (NMP2L 0589) and August 22, 1986 (NMP2L 0851).

TOPIC: [Illegible]

2. Physical separation between divisions of essential systems and between essential systems and essential circuits is maintained for all essential nuclear steam supply systems (NSSS) except the NMS, the RPS, the PRM system, and the control rod drive (CRD) hydraulic system.
3. Design criteria for fire protection is discussed in Section 9.5.1.

Regulatory Guide 1.89 Refer to Sections 3.10 and 3.11.

Regulatory Guide 1.97 Refer to Section 1.10.

Regulatory Guide 1.100 Refer to Section 3.10.

Regulatory Guide 1.105 The trip set point (instrument set point) and allowable value (technical specification limit) are contained in Chapter 16. These parameters are all appropriately separated from each other and their selection is based on instrument accuracy, calibration capability, and design drift (estimated) allowance data. The set points are within the instrument accuracy range. The established set points provide margin to satisfy both safety requirements and plant availability objectives.

→ Insert Next Page ←

Regulatory Guide 1.118 This guide endorses/modifies IEEE-338-1975. Discussion of IEEE-338 is presented on a system-by-system basis in the analysis portions of Sections 7.2, 7.3, 7.4, and 7.6 with the following clarification of the regulatory guide requirements.

Position C.6b Trip of an associated protective channel or actuation of an associated Class 1E load group is required on removal of fuses or opening of a breaker only for the purpose of deactivating instrumentation and control circuits.

#### 7.1.2.4 Instrument Errors

The determination of set points requires that during the design of safety-related systems, instrument drift, setability, and repeatability be considered when selecting instruments and controls.

Adequate margin between safety limits and instrument set points is provided to allow for instrument error. The appropriate trip setpoints and allowable values are listed in Chapter 16. The amount of instrument error is determined by test and experience. The set point is selected based on these



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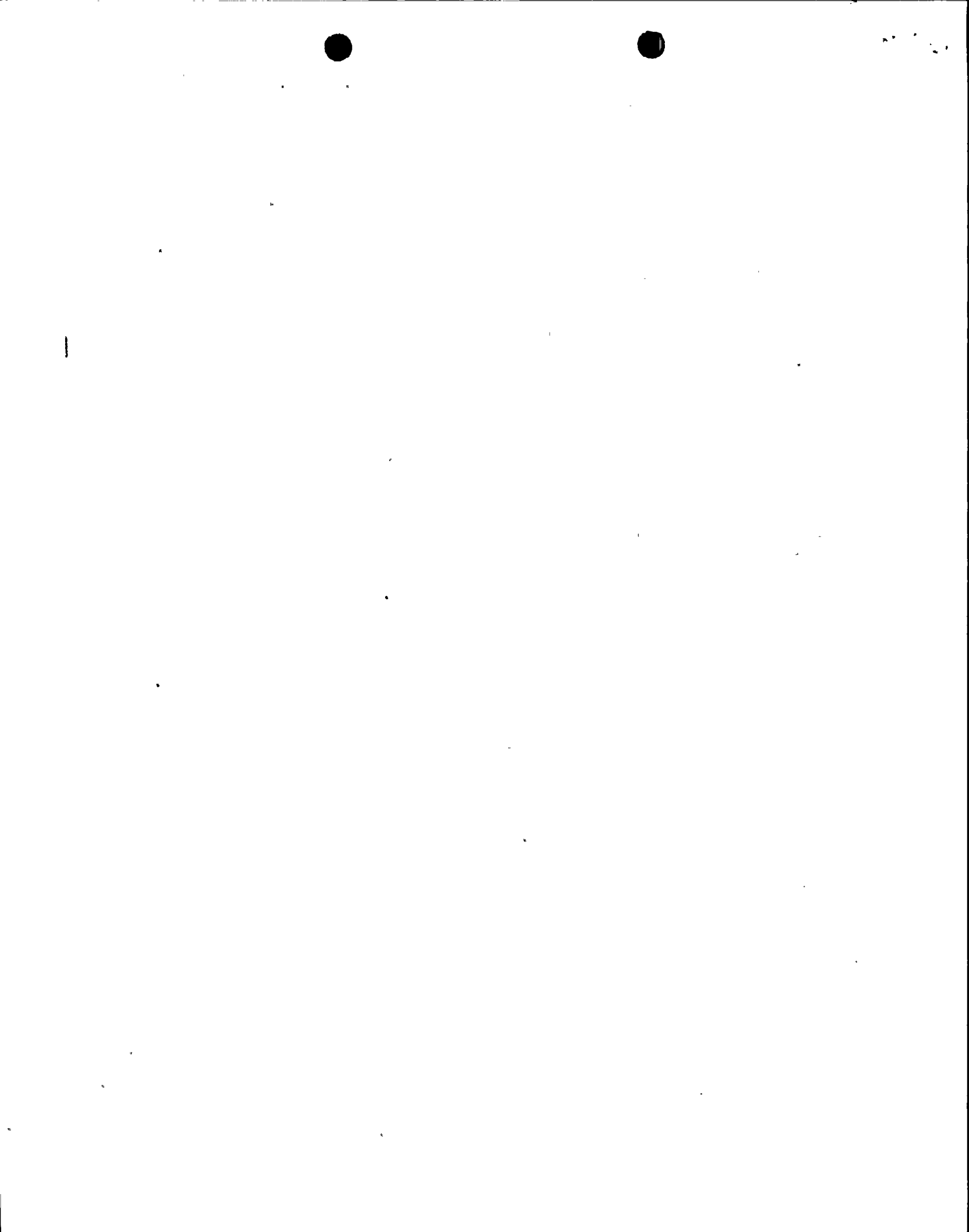
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NMPC will provide to the NRC, prior to the startup following the first refueling outage, a detailed technical assessment of the methods used to establish protection system setpoints and allowable values supplied by General Electric. The assessment will be based on the generic findings of the Instrument Setpoint Methodology Program currently in process.

The technical assessment will include the following:

- 1) The values assigned to each component of the combined channel error allowance (e.g., modeling uncertainties, analytical uncertainties, transient overshoot, response times, trip unit setting accuracy, sensor accuracy, test equipment accuracy, sensor drift, nominal and harsh environmental allowances, trip unit drift), the basis for these values, and the methods used to sum the individual errors. Where zero is assumed for an error, a justification that the error is negligible shall be provided.
- 2) Confirmation that the setpoints selected for the initiation of protective actions ensure that the reactor core and reactor coolant system are prevented from exceeding the licensing safety limits for the transients and accidents analyzed.



Nine Mile Point Unit 2 FSAR

TABLE 421.36-1 (Cont)

SWEC/ GE-NED I.D.#	Parameter Description	Reg. Guide 1.97, Rev. 3		Location	Sensor		Qualification		OA Class	Power Supply	Display Location	Notes
		Variable	Classification		Instr.	Range	Seismic	Environmental				
2MSS*MOV111 B22-F016	Primary Containment Isolation - MSS	B10q3	1	N/A	N/A	Yes	Yes	I	Div. 2	P602	-	
2MSS*HYV6A, B,C,D B22-F022A,B, C,D	Primary Containment Isolation - MSS	B10q4	1	N/A	N/A	Yes	Yes	I	RPS Div 2	P602	-	
C51-J004A,B, C,D,E	Primary Containment Isolation - HMS	B10r	1	N/A	N/A	Yes	No	II	Non-1E	P607	10	
2RCS*SOV65A, B;66A,B;67A, B;68A,B 2RCS*SOV104 B35-F020	Primary Containment Isolation - PCS	B10s1	1	N/A	N/A	Yes	Yes	I	Div. 1	P602	-	
2RCS*SOV79A, B;80A,B;81A, B;82A,B 2RCS*SOV105 B35-F019	Primary Containment Isolation - RCS	B10s2	1	N/A	N/A	Yes	Yes	I	Div. 2	P602	-	
2RHS*MOV1A, 15A,24A, 25A,26A,27A, 30A,33A, 40A,67A,104, 113; * AoV 16A, 39A E12-F004a, F016A, F041A, F042A, F017A, F074A, F105A, F027A, F050A, F053A F099A, F023, F008	Primary Containment Isolation - RHS	B10t1	1	N/A	N/A	Yes	Yes	I	Div. 1	P601	-	



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Nine Mile Point Unit 2 PSAR

TABLE 421.36-1 (Cont)

SWEC/ GE-NED I.D.#	Reg. Guide 1.97, Rev. 3		Sensor		Qualification		QA Class	Power Supply	Display Location	Notes
	Parameter Description	Parameter Variable Classification	Location	Instr. Range	Seismic	Environmental				
2RMS-CAB170	Containment C13 Effluent Radioactivity	3	Main Stack Enclosure <i>02/79C</i>	Isotopic <i>10<sup>7</sup>-10<sup>8</sup></i>	No	Yes <i>10<sup>-6</sup>-10<sup>5</sup> μCi/cc</i>	II	Non-1E	P882	39
2RMS-CAB180 -	Effluent C14 Radioactivity	2	Turb Bldg Turb Oper Floor	Isotopic <i>10<sup>7</sup>-10<sup>8</sup></i> uci/cc	No	Yes <i>10<sup>-6</sup>-10<sup>4</sup></i>	II	Non-1E (UPS)	P882	39
<i>W</i> 2RMS-PT1A,B C33-N001A,B	Main Feedwater Flow -A,B	3	Turb Bldg	Turb Bldg 0-8.5 lbs/hr (each)	No	No	II	Non-1E	P603	
2CNS-LT8A,B	Condensate D2 Storage Tk Level - A, 8	3	Cond Stor TK1A,TK1B	0-500 K gal (each)	No	No	II	Non-1E	P851	-
2RMS*PT64A <i>E12-N091A</i>	Suppression D3a Chamber Spray Header Flow - A	2	Rx Bldg (Sec Contnt)	0-450 gpm	Yes	Yes	I	Div. 1	P601	-
2RMS*PT64B <i>E12-N091B</i>	Suppression D3b Chamber Spray Header Flow - B	2	Rx Bldg (Sec Contnt)	0-450 gpm	Yes	Yes	I	Div. 2	P601	-
See Note 18	Drywell D4 Pressure	2	-	-	-	-	-	-	-	18,41   .26
See Note 19	Suppression D5 Water Level (Weir Well)	2	-	-	-	-	-	-	-	19
2CNS*TE67A, 68A,69A,70A	Suppression D6a Pool Water Temp-A	2	Suppression 50- Pool	250°F	Yes	Yes	I	Div. 1	P601	20,41   .26
2CNS*TE67B, 68B,69B,70B	Suppression D6b Pool Water Temp-B	2	Suppression 50- Pool	250°F	Yes	Yes	I	Div. 2	P601/ P598	20,41   .26



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Nine Mile Point Unit 2 PSAR

TABLE 421.36-1 (Cont)

SWEC/ GE-NED I. D. #	Parameter Description	Reg. Guide 1.97, Rev. 3		Sensor		Qualification		QA Class	Power Supply	Display Location	Notes
		Variable	Classification	Location	Instr. Range	Seismic	Environmental				
2SLS*PT113 E41-N007 LC	SLCS Flow	D17	2	Rx Bldg (Sec Contnt)	0-86 gpm	Yes	Yes	I	Div. 1	P601	-
2SLS*LT103 C41-N001	SLCS Storage Tank Level	D18	2	Rx Bldg (Sec Contnt)	0-10,000 Gal	Yes	Yes	I	Div. 1	P601	40
See Note 22 See Note 22	RHR System Flow	D19	2	-	-	-	-	-	-	-	22
2RHS*TE13A E12-N027A	RHR Heat Exchanger Outlet Temp - A	D20a	2	Rx Bldg (Sec Contnt)	0-600°F	Yes	<del>Yes</del> No	I	Non-1E	P601	-   26
2RHS*TE13B E12-N027B	RHR Heat Exchanger Outlet Temp - B	D20b	2	Rx Bldg (Sec Contnt)	0-600°F	Yes	<del>Yes</del> NO	I	Non-1E	P601	-   26
2SWP*TE31A	Cooling Water Temp to ESP System Components - A	D21a	2	Screen- well Bldg	35-130°F	Yes	Yes	I	Div. 1	P601	20
2SWP*TE31B	Cooling Water Temp to ESP System Components - B	D21b	2	Screen- well Bldg	35-130°F	Yes	Yes	I	Div. 2	P601	20
2SWP*PT13A E12-N007A	Cooling Water Flow to ESP System Components - A	D22a	2	Rx Bldg (Sec Contnt)	0-10,000 gpm	Yes	Yes	I	Div. 1	P601	23
2SWP*PT13B E12-N007B LB	Cooling Water Flow to ESP System Components - B	D22b	2	Rx Bldg (Sec Contnt)	0-10,000 gpm	Yes	Yes	I	Div. 2	P601	23



10-2-20