Consumers Power
POWERING MICHIGAN'S PROGRESS
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April 20, 1987

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
IE INSPECTION REPORT 86032, ADDITIONAL INFORMATION

IE Inspection Report 86-032 dated February 17, 1987 transmitted several unresolved and open items to which a written response was not required. Subsequent to receiving the inspection report on February 20, 1987, several conversations have taken place between Consumers Power Company and the NRC regarding the status of these items. It should be noted that all issues regarding equipment operability and reliability have been addressed and that all remaining actions are considered enhancements to EEQ file auditability. Attached are the statuses of the items identified in the inspection report and subsequently discussed with Mr ASGautam of the Region III staff.

Brian D Johnson

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Staff Licensing Engineer

CC Administrator, Region III, NRC
NRC Resident Inspector - Palisades

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OC0487-0039-NL02

POTENTIALLY ENFORECABLE/UNRESOLVED ITEMS

Item No	Description	Status
86032-01	Unqualified grease found in Limitorque actuators.	The SUN 50 EP grease has been removed, actuators cleaned and qualified Exxon NEBULA EP-0 grease installed in EEQ listed Limitorque Valve Actuators.
86032-05	ASCO solenoid valves found installed without seals to prevent moisture intusion.	Conduit seals have been installed for: 1) all EEQ listed ASCO solenoid valves in containment which need to energize after initiation of a design basis accident (DBA), and 2) all EEQ listed ASCO solenoid valves outside of containment which were in a 100% humidity accident environment and which need to energize after initiation of a DBA. The above actions were taken as a result of a conference call between CPCo and ASGautam on January 12, 1987.
86032-06	Certain EEQ files found not auditable due to incorrect acceptance criteria and and missing information.	The new accident profiles will be completed and incorporated by July 1, 1987, per conversation between KAToner, CPCo, and ASGautam on April 3, 1987.
86032-07	Rockbestos Firewall III EEQ files did not establish qualification of appropriate cables.	Analyses necessary to close this item were completed April 6, 1987.
86032-09	Effects on low IR's during LOCA testing not addressed in General Electric Cable EEQ files.	Analyses necessary to close this item have been completed. Per conversation between KAToner, CPCo, and ASGautam on April 3, 1987, the analyses will be incorporated into EEQ files by July 1, 1987.
86032-10	Plant installed Viking potted connectors found unqualified for instrumentation circuits.	Analyses necessary to close this item have been completed. Per conversation between KAToner, CPCo, and ASGautam on April 3, 1987, the analyses will be incorporated into EEQ files by July 1, 1987.

86032-11	Rosemount transmitter EEQ files did not justify demonstrated accuracy of these instruments for plant accident conditions.	As presented to the NRC at Region III headquarters on March 16, 1987, analyses are complete. Also completed are administrative controls necessary to assure required safety functions are achieved from equipment associated with Rosemount transmitters. Actions taken are described in CPCo internal correspondence; KAT87*008 and RJF87*011, which are attached. Primary coolant system pressure transmitters PT-0104A and B and PT-0105A and B are being evaluated for replacement with new transmitters to significantly eliminate instrument inaccuracy.
86032-12	Limitorque actuators determined to be unqualified due to blocked T-drains.	Motor T-drains have been installed. Reference LER 87-003 for actions taken.

OPEN ITEMS

86032-08	General Electric Cable 1 and 2 EEQ files had discrepancies in the qualification requirements for radiation.	Per conversation with KAToner, CPCo, and ASGautam on April 3, 1987, necessary actions to close this item will be complete by July 1, 1987.
86032-04	Lack of controlled procedure for replacement of "O" rings and torquing of transmitters.	This item has been completed by adding necessary administrative controls to instrument calibration sheets associated with Technical Specifications Surveillance Procedures.
86032-02	Deficiencies in the PPACS listing of maintenance activities for containment air coolers, position limit switches and motor oil in EEQ pumps.	Actions necessary to complete these items are underway and expected to be completed by May 15, 1987.
86032-03	Lack of instructions for replacement of CELMARK connector "O" rings.	Actions considered necessary to resolve this concern are under evaluation. Details of these specific actions will be provided to the NRC by May 15, 1987.

To RJFrigo, Palisades

From KAToner, Palisades KAT

Date March 19, 1987

Subject PALISADES PLANT - EEQ TRANSMITTER ERROR ANALYSIS - IMPACT ON OPERATING PROCEDURES

CC RAFenech, Palisades
KEOsborne, Palisades

CONSUMERS POWER COMPANY

Internal Correspondence

KAT87*008

Engineering Analysis EA-KAT-87-01 was performed to assess the impact on the ability to achieve safety functions during LOCA and MSLB conditions in light of transmitter errors resulting from harsh environmental conditions. As concluded in the analysis, required safety functions can be achieved even in the presence of such errors if the following recommended procedural revisions are incorporated:

REGARDING ENTRY INTO SHUTDOWN COOLING

Recommendations:

1. Either the strict use of PI-0104 (preferably narrow range, however either narrow or wide range is acceptable) and PTR-0125, or the average of all qualified PCS pressure indications (the aforementioned indicators as well as indicators PI-0105A through D) are to be used to determine when the Shutdown Cooling System (SDCS) isolation valves MO-3015 and MO-3016 are to be manually opened to commence SDC.

2. The indication at which the SDCS isolation valves are to be opened should be revised from 270 psia to 180 psia to ensure that the upper and lower pressure limits as described in Item 1 above are not exceeded.

Note:

The strict use of PI-0104 and PTR-0125 is preferred over averaging all indications in this case, since the shifts in output owing to transmitter error are less for these instruments than that expected for the 0105 loops previously identified. Incorporating Recommendation 2 will ensure that neither the maximum SDCS design pressure or the minimum PCS pressure to ensure subcooling will be exceeded if PI-0104 and PTR-0125 are used (see attached sketch).

The 0105 loop errors result in peak-to-peak output shift variations of a magnitude which exceeds the pressure band between the overpressurization and subcooling limits regardless of what pressure within the band would be specified as signifying when the operator should open the valves. As a result, using the 0105 loops for this function would require averaging all readings; a practice which would likely reduce the overall inaccuracy of the reading but would not necessarily ensure that the actual PCS pressure would be within the acceptable bounds (see attached sketch).

REGARDING ENTRY INTO "ONCE-THROUGH" COOLING

Recommendations:

1. A specific caution statement should be added to emergency procedures to indicate that all four wide range steam generator loop indications (LI-0757A and B for Steam Generator A and LI-0758A and B for Steam Generator B) should be scanned with an average value obtained to ascertain when to enter PCS "once-through" cooling.

2. Core exit thermocouples should also be monitored as a backup check to the wide range level indication. Proceeding to "once-through" cooling should be based on both:

   - Steam generator low level which indicates that the generator may not be capable of serving as an effective heat sink, and

   - Core exit thermocouples which confirm steam generator ineffectiveness by showing inadequate PCS cooldown.

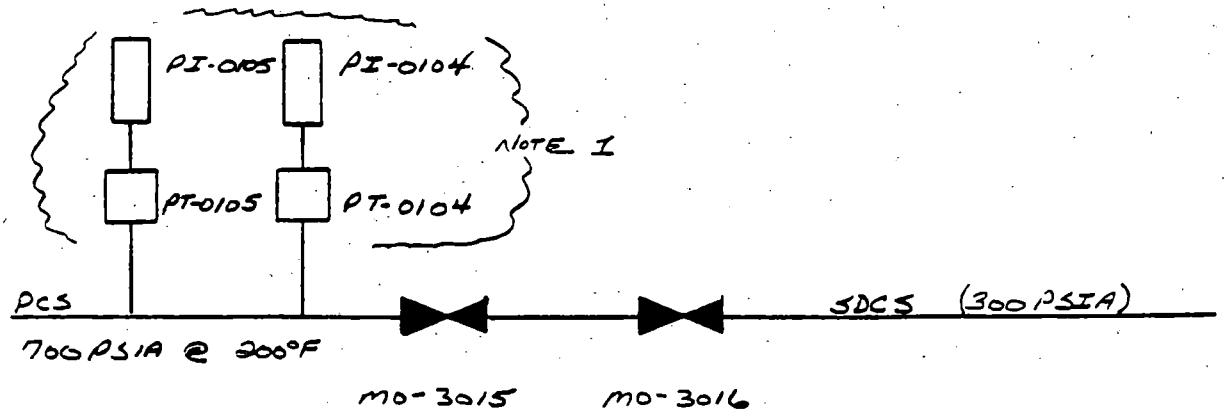
Notes:

A. In this case, the -84% indication signifying when "once-through" cooling is to be initiated is considered acceptable. (At this level, 36% of the tubes are submerged; a level at which effective heat transfer can still be achieved.) Although maximum potential transmitter error could result in an actual level of -120% when -84% is indicated, appreciable inventory (~ 23%) will still exist in the steam generator, and the likelihood of steaming the steam generator shell dry before corrective actions are taken is almost non-existent. Since safety function status checks are performed periodically, it is expected that the operator will be aware of either low or descending steam generator level in a timely manner.

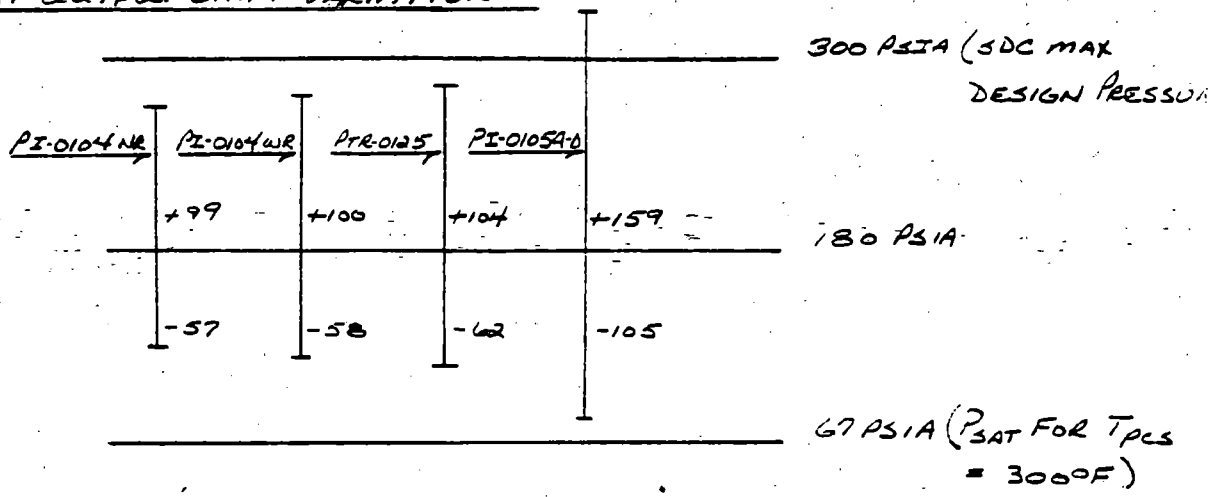
B. Based on discussions conducted subsequent to completion of the analysis, it is requested that the Operations Department review emergency procedures to determine if existing guidance related to the assessment of "once-through" cooling entry conditions fulfills the intent of the above recommendations. If the existing guidance is considered effective, no procedural revision should be undertaken since unnecessary revision may render the procedures confusing.

INDICATION ERRORS RELATED TO DETERMINING SHUTDOWN COOLING ENTRY CONDITIONS

PIPING & INSTRUMENT SKETCH



INSTRUMENT OUTPUT SHIFT VARIATION



NOTE I : THE FOLLOWING INDICATORS ARE FED BY THE ASSOCIATED TRANSMITTERS AS SHOWN:

PT-0104A : PI-0104 NARROW RANGE
PT-0104B : PTR-0125
PT-0105A : PI-0105A
PI-0105C
PI-0104 WIDE RANGE
PT-0105B : PI-0105B
PI-0105D

KAT 87*

To KAToner

From RJFrigo

Date March 26, 1987

Subject PALISADES PLANT-
EEQ TRANSMITTER ERRORS

CC RAFenech
KEOsborne

CONSUMERS
POWER
COMPANY

Internal
Correspondence

RJF87*011

Per memo KAT87*008 the following change has been made to the EOPs in response to transmitter errors resulting from degraded containment conditions:

a) EOPs 4.0 (LOCA), 6.0 (ESDE), & 9.0 (Functional Recovery) have been modified to state "PCS pressure 270 psia (180 psia for degraded containment) OR less as indicated on PI-0104 OR PTR-0125" as a condition to go on shutdown cooling.

b) No changes are warranted for the four S/G wide range instruments. The use of these instruments is in conjunction with other indications (Qualified CETs & PCS pressure trends) to determine if S/G heat removal capability is lost.