

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9701030195 DOC. DATE: 96/12/27 NOTARIZED: NO DOCKET #
 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 96-012-00: on 961204, missed surveillance on containment
 average temperature occurred. Caused by operator log required
 only single average containment temperature entry. Logs have
 been revised. W/961227 ltr.

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10 CFR 50.73

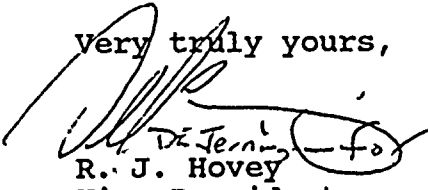
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 96-012
Missed Surveillance on Containment Average Temperature

The attached Licensee Event Report 250/96-012 is being provided in accordance with 10 CFR 50.73(a)(2)(i)(B).

If there are any questions, please contact us.

Very truly yours,


R. J. Hovey
Vice President
Turkey Point Plant

CLM

attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II,
USNRC
Thomas P. Johnson, Senior Resident Inspector, Turkey
Point Plant, USNRC

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

TURKEY POINT UNIT 3

DOCKET NUMBER (2)

05000250

PAGE (3)

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TITLE (4) MISSED SURVEILLANCE ON CONTAINMENT AVERAGE TEMPERATURE

EVENT DATE (5)			LER NUMBER(6)			RPT DATE (7)			OTHER FACILITIES INV. (8)	
MON	DAY	YR	YR	SEQ #	R#	MON	DAY	YR	FACILITY NAMES	DOCKET # (S)
12	4	96	96	012	00	12	27	96		

OPERATING MODE (9)

1

POWER LEVEL (10)

100

10 CFR 50.73(a)(2)(i)(B)

LICENSEE CONTACT FOR THIS LER (12)

C.L. MOWREY, COMPLIANCE SPECIALIST

Telephone Number

(305) 246-6204

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?
X	IK	TE	W108	N	X	IK	TR	L130	N

SUPPLEMENTAL REPORT EXPECTED (14) NO ☒ YES ☐

(if yes, complete EXPECTED SUBMISSION DATE)

EXPECTED
SUBMISSION
DATE (15)

MONTH

DAY

YEAR

ABSTRACT (16)

On December 5, 1996, the Assistant Nuclear Plant Supervisor discovered that containment average temperature was being determined based on only two temperature elements (TEs), instead of the three required by Technical Specification 4.6.1.5. Containment average temperature had been obtained by manually averaging three points recorded on recorder R-3-1413 until December 3, 1996, when the recorder failed. At that time, operators began recording temperature from another source which automatically averages three temperature elements; one of the three elements had been inoperable for several months, and the operators forgot that three were required.

The cause was that the operator log required only a single average containment temperature entry. The log does not flag the requirement of three TEs to calculate the average temperature, nor does it require three individual temperature entries.

The recorder was repaired. The logs have been revised. A Night Order was issued to ensure personnel know of the event, and that a good questioning attitude with self-checking could have prevented the missed surveillance. The failed TE will be repaired at the next outage of sufficient duration. The Technical Specification temperature limit was not exceeded at any time.

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I. DESCRIPTION OF THE EVENT

Technical Specification (T/S) 3.6.1.5 requires that the containment average temperature shall not exceed 125 degrees F, and shall not exceed 120 degrees F by (for) more than 336 equivalent hours during a calendar year. T/S Surveillance Requirement (SR) 4.6.1.5, Containment Systems: Air Temperature, requires that the arithmetical average of temperatures at three specific locations be determined at least once per 24 hours.

Temperature Element TE-3-6701 [IK:te] is one of the three TEs normally used to calculate average temperature, and is displayed on the Emergency Response Data Acquisition and Display System (ERDADS) [IU]. ERDADS displays the three individual temperature readings on one screen page and the calculated average containment temperature on a second page.

TE-3-6701 failed on June 10, 1996, and a work request was initiated for repairs. During the planning of the work request it was determined that this repair would require a unit outage; the work order was placed on hold. Due to the failure of TE-3-6701, the containment average temperature has been obtained from the alternate source. There is a designated alternate TE for each of the three primary TEs. The alternate TEs read out on recorder R-3-1413 [IK:tr]. This method requires the operator to manually calculate the average temperature using the three individual readings. The alternate method was employed from June 10, 1996 through December 3, 1996, when recorder R-3-1413 failed.

The Assistant Nuclear Plant Supervisor (ANPS) (licensed senior operator) on shift at the time of the recorder failure directed the Reactor Control Operator (licensed operator) to obtain the average containment temperature from ERDADS, based on the fact that TE-3-6701 had been eliminated from the containment average temperature calculation. The average temperature was calculated using the two remaining TEs 3-6700 and 6702. The use of two detectors does not satisfy the requirements of SR 4.6.1.5. The failure to satisfy the SR was discovered by another ANPS at 2045 on December 5, 1996, and repairs to R-3-1413 were expedited. The recorder was repaired and the SR satisfied at 0200 on December 6, 1996, when the correctly averaged containment temperature was verified to be below 120 degrees F.

As of December 4, 1996 (24 hours after the recorder failure), this condition constituted a missed surveillance, but there is reasonable assurance that the containment average temperature did not exceed the

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T/S continuous limit of 120 degrees F. The unit was operating at a steady state power level, and containment ventilation and cooling [VA] was normal. Containment average temperature for several days before the recorder failure ranged from 104.3 degrees F to 107 degrees F. The two element average temperature did not exceed 106 degrees F during the period that recorder R-3-1413 was failed. Containment average temperature for the first three data logs after the recorder was returned to service ranged from 106 degrees F to 106.67 degrees F.

II. CAUSE OF THE EVENT

Root Cause:

The Data Logger [ID] used for RCO logs requires only a single average containment temperature entry. The Data Logger does not flag the T/S surveillance requirement of three TEs to calculate the average temperature, nor does it require three individual temperature entries.

Causal Factors:

Compensatory actions for equipment out of service are listed on the individual pages. The Equipment Out Of Service (EOOS) Log review requires a review of the index, but not of the individual pages.

The T/S Minimum Equipment List does not address the containment temperature elements.

The Information Tag placed on the ERDADS monitor stated that TE-3-6701 was Out Of Service, but did not address T/S 4.6.1.5 nor state, "Do not use for containment average temperature."

TE-3-6701, containment temperature input to ERDADS, has been out of service for 6 months.

Several licensed operators exhibited lack of a questioning attitude with self checking.

III. ANALYSIS OF THE EVENT

The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or steam line

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break (SLB), as described in the Updated Final Safety Analysis Report (FSAR), and in WCAP-14276, Rev. 1, Florida Power And Light Company, Turkey Point Units 3 And 4, Upgrading Licensing Report, dated December 1995. This WCAP was submitted to the NRC on December 18, 1995, as part of Turkey Point's proposed license amendment to support the Thermal Upgrade project. The license amendment was approved on September 26, 1996, and implemented on Unit 3 on October 11, 1996.

The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This T/S ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray and Cooling systems during post accident conditions is dependent upon the energy released to the containment due to the event, as well as the initial containment temperature and pressure. The higher the initial temperature, the more energy that must be removed, resulting in higher peak containment pressure and temperature. Exceeding containment design pressure may result in leakage greater than that assumed in the accident analysis. Operation with containment temperature in excess of the T/S limit violates an initial condition assumed in the accident analysis.

Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analyses for containment.

The limiting DBAs considered relative to containment OPERABILITY are the LOCA and SLB. The DBA LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure transients. No two DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to Engineered Safety Feature (ESF) systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train each of the Containment Spray System, Residual Heat Removal System, and Containment Cooling System being rendered inoperable.

The limiting DBA for the maximum peak containment air temperature is a LOCA. The initial containment average air temperature assumed in the LOCA analysis is 130 degrees F. The predicted peak containment temperature is 273.9 degrees F. The containment design temperature is 283 degrees F.

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The containment pressure transient is sensitive to the initial air mass in containment and, therefore, to the initial containment air temperature. The limiting DBA for establishing the maximum peak containment internal pressure is a LOCA. The temperature limit is used in this analysis to ensure that in the event of an accident the maximum containment internal pressure will not be exceeded.

During a DBA, with an initial containment average air temperature less than or equal to the T/S temperature limit, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of containment to perform its design function is ensured.

Verifying that containment average air temperature is within the T/S limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. The 24 hour frequency of this surveillance requirement is considered acceptable based on observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment).

Because the conditions of the actual event were bounded by the assumptions and results of the analyses in the UFSAR and the WCAP (steady state power level, normal containment ventilation and cooling, and no indication that containment temperature exceeded 120 degrees F), this event did not compromise the health or safety of plant personnel nor the general public.

This event is reportable under the requirements of 10 CFR 50.73(a)(2)(i)(B).

IV. CORRECTIVE ACTIONS

- 1) Recorder R-3-1413 was repaired and the average containment temperature was calculated using the three specified alternate temperature elements, with results less than 120 degrees F.
- 2) A Night Order was issued to explain the event and cautioning personnel that a questioning attitude and a review of T/S could have prevented the missed surveillance.

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- 3) Operations personnel have been informed that a review of only the EOOS log index is inadequate, and have been instructed to review the individual pages during the shift turnover process.
- 4) The Information Tag on the Unit 3 ERDADS monitor has been changed adding, "Do not use for containment average temperature."
- 5) The RCO logs have been reviewed for similar deficiencies and the Data Logger program has been updated. The RCO Daily Logs, 3/4-OSP-201.1, Forms 420, 421, 422, and 423 have been revised.
- 6) Enhancements to 3/4-OSP-201.1, RCO Daily Logs, Enclosure 1, "RCO Logsheets Basis Index," and Attachment 2, "Minimum Instrumentation and Equipment List," have been incorporated. The revisions are in the review and approval process.
- 7) TE-3-6701 will be repaired during a unit outage of sufficient duration.

V. ADDITIONAL INFORMATION

- A. Similar events: there have been no recent events related to containment building integrity. LER 250/96-004 reported missed surveillance due to inadequate surveillance procedures. LER 250/96-008 also reported a missed surveillance, due to misinterpretation of surveillance requirements regarding preconditioning. Neither of these events involved real time equipment failures impacting the ability of operators to satisfy surveillance requirements.
- B. EIIS Codes are shown in the format [EIIS SYSTEM: IEEE component function identifier, second component identifier (if appropriate)].