

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9611140236 DOC.DATE: 96/11/06 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 96-011-00:on 961009,potential for overpressurizing post
 accident containment vent filter housings occurred.Caused by
 improper change mangement.Monitor sys operating procedures
 were revised.W/961106 ltr.

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L-96-292
10 CFR 50.73

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

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Reportable Event: 96-011-00

Potential for Over Pressurizing the Post Accident Containment Vent
Filter Housings

The attached Licensee Event Report, 250/96-011-00, is being
provided in accordance with 10 CFR 50.73(a) (2) (v) (C).

Should there be any questions, please contact us.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

JAH

Attachment

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

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <div style="text-align: center;">TURKEY POINT UNIT 3</div>	DOCKET NUMBER (2) <div style="text-align: center;">05000250</div>	PAGE (3) <div style="text-align: center;">1 of 5</div>
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TITLE (4) <div style="text-align: center;">POTENTIAL FOR OVERPRESSURIZING THE POST ACCIDENT CONTAINMENT VENT FILTER HOUSINGS</div>	
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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)
10	09	96	96	011	00	11	06	96	TURKEY POINT UNIT 4	05000251

OPERATING MODE (9)	1	10 CFR 50.73(a)(2)(v)(C).
POWER LEVEL (10)	100	

LICENSEE CONTACT FOR THIS LER (12)	
James A. Hickey, Licensing Engineer	Telephone Number (305) 246-6668

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?

SUPPLEMENTAL REPORT EXPECTED (14) NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(if yes, complete EXPECTED SUBMISSION DATE)				

ABSTRACT (16)	<p>At 1620 on October 9, 1996, based on a procedural review, Florida Power & Light Company determined that a condition existed which had the potential to overpressurize the Post Accident Containment Vent (PACV) filter housings during post accident conditions.</p> <p>The Post Accident Hydrogen Monitors (PAHM) are placed inservice within thirty minutes after a valid Engineered Safety Feature actuation. Assuming a large break Loss of Coolant Accident and the failure of the "A" train PAHM containment suction isolation valve, procedural guidance existed which would have cross-tied the "B" train PAHM containment suction to the "A" train PAHM. The cross-tied suction would provide post accident sampling capability and two electronic channels of hydrogen monitoring. The specific valve alignment used to cross-tie the PAHM/Post Accident Sampling (PASS) suction lines would have resulted in pressurizing the PACV filter housings. The PACV filter housings are not designed to operate under the containment conditions which would exist within the first few hours of a large break Loss of Coolant Accident. The PACV filter housings would be expected to fail and cause an unanticipated monitored release.</p> <p>The root cause of the event was improper change management.</p> <p>The Containment Post Accident Monitor Systems Operating Procedures were revised on October 09, 1996, to eliminate the steps to cross-tie the PAHM/PASS suction lines.</p>
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I. DESCRIPTION OF THE EVENT

At 1620 on October 9, 1996, based on a procedural review, Florida Power & Light Company (FPL) determined that a condition existed which had the potential to overpressurize the Post Accident Containment Vent filter housings [WE:flt] during post accident conditions. The Post Accident Containment Vent System (PACV) was recently upgraded to support a thermal power uprate. The NRC resident inspector raised a question concerning minor procedural discrepancies between Unit 3 and Unit 4, for placing PACV inservice. FPL initiated procedure revisions to resolve the discrepancies. FPL expanded the procedure review to include those systems which interface with the PACV. The procedure review identified a potential Post Accident Hydrogen Monitor System (PAHM) [WE:45]/Post Accident Sampling System (PASS)[WE:45] alignment which could overpressurize the PACV filter housings. Condition Report 96-1263 was initiated at 1000 on October 9, 1996, to perform an operability assessment of PACV, PAHM, and PASS.

The PACV System is shared between Units 3 and 4. The PACV System consists of a particulate filter [WE:flt] and charcoal filter [WE:flt] with valves and piping to support post accident containment venting. The PAHM and PASS sample supply lines tap into the PACV supply piping, (see Figure 1). The Post Accident Hydrogen Monitors are placed in service within thirty minutes after a valid Engineered Safety Feature actuation. Procedure 3/4-OP-094, "Containment Post Accident Monitoring Systems" directs the opening of HV-3/4-1 [WE:smv] to provide a suction source for the "A" train PAHM/PASS [WE:45]. If valve HV-3/4-1 failed to open the operator was directed to cross-tie the sample suction lines by opening HV-3/4-2 [WE:smv] and HV 3/4-4 [WE:smv]. This action would apply containment pressure to the PACV filter housings via normally open HV-2 [WE:isv] and HV-7 [WE:isv]. The PACV filter housings had a design pressure of 5 psig. If pressure in excess of 5 psig were applied to the PACV filter housings, the housings would likely have failed. The PACV filter housings failure would have resulted in an unanticipated monitored release. Based on this sequence of events, at 1620 on October 9, 1996, FPL determined procedural guidance for potentially overpressurizing the PACV filter housings did exist. The NRCOC was notified at 1732 on October 9, 1996 in accordance with 10 CFR 50.72(b)(2)(iii)(C).

The investigation concluded that PASS was not required to support single failure criteria and the operable "B" PAHM satisfied the requirements for containment hydrogen monitoring. Therefore, the alternate PAHM and PASS sample alignment was not needed to meet any operability requirements. Procedures 3/4-OP-094 were revised to eliminate the procedural guidance for cross-tying the suction sources in the event of a failure of HV-3/4-1 to open.

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II. CAUSE OF THE EVENT

Root Cause

The root cause of the event was improper change management. The original operating configuration for the PACV filter housings showed inlet valve HV-2 as closed. In 1990 FPL identified potential dose concerns associated with the need to locally open HV-2 under post accident conditions. Based on these dose concerns FPL changed the system alignment for the PACV filter inlet valves from normally closed to normally open. The decision to open the PACV filter inlet valves did not adequately assess the effect of the valve realignment on systems which interface with PACV, specifically, the alternate PAHM and PASS suction alignment referenced in 3/4-OP-094.

III. ANALYSIS OF THE EVENT

The alternate PAHM and PASS alignment had the potential to over pressurize the PACV filter housings. This action could have resulted in an unanticipated monitored release. The release from a faulted filter housing would flow through the Auxiliary Building, Auxiliary Building Exhaust Filters[NF:flt] and Fans[NF:fan], and exit via the Plant Vent Stack which is monitored via R-14[WE:45]. FPL performed a dose assessment using the following assumptions:

- ▶ A Double Ended Pump Suction (DEPS) break would occur at time zero. The DEPS break would bound all other containment response events.
- ▶ The PAHM and PASS alternate alignment would be completed about thirty minutes following the event.
- ▶ Reach rod operated valve HV-3/4-4 would be closed at about sixty minutes following the event. This action would terminate the release. Total release duration would be thirty minutes.
- ▶ No core damage or fuel melt would occur during the first hour. However, a partial or full gap release to containment is likely.
- ▶ A realistic source term is assumed based on NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants." NUREG-1465 indicates that during the first hour post-accident, the volatile material released to containment consists of the noble gas gap activity (5% of total core inventory) and halogens in the gap (5% of total core inventory). FPL assumed a gap activity of 10% of total core inventory and 10% of total core inventory halogen dispersal.

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As a result of the gap release to containment, the whole body dose to a member of the public would be about 2 Rem at the exclusion boundary. For the same release the thyroid dose to a member of the public would be about 24 Rem. These doses are in addition to the exclusion boundary doses previously calculated for a LOCA. Including the LOCA doses a member of the public at the exclusion boundary would receive about 3 Rem whole body and 47.6 Rem thyroid. Based on this realistic source term, 10 CFR 100 guidelines would not be exceeded.

The following conditions must occur to support the postulated scenario:

1. A large break LOCA
2. Fuel rod bursting
3. Containment pressure greater than 5 psig
4. A mechanical failure of HV-3/4-1 to open

Utilizing the guidance of NUREG/CR-4550, the probability of a large break LOCA is $5.0E-4/\text{Yr}$. The generic probability of a Manual Valve failing to operate is $3.5E-4/\text{Yr}$. The valve design of HV-3/4-1 includes a reach rod, therefore the valve failure probability was raised by a factor of ten. The probability of a large break LOCA and failure of HV-3/4-1 is $1.8E-6/\text{Yr}$.

The faulted PACV system was reviewed for impact on PASS and PAHM system operability. Both systems would remain operable during the event.

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

IV. CORRECTIVE ACTIONS

1. Operating Procedures 3-OP-094 and 4-OP-094 have been revised to eliminate the alternate PAHM and PASS sample suction source flow path.
2. A review and walkdown of similar infrequently used systems for consistency in procedural guidance between Units 3 and 4 and system interface implications will be performed. The similar infrequently used systems include the Post Accident Hydrogen Monitors, Post Accident Sample System, and Hydrogen Recombiners.
3. FPL will evaluate the normal Post Accident Containment Vent system alignment for additional procedural improvements.

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V. ADDITIONAL INFORMATION

In 1990 as a result of Local Leak Rate Testing on Unit 3 during refueling, the operating Unit 4 PACV was inoperable for greater than the allowed outage time. Reference LER 251/90-002-01.

Figure 1 shows the basic relationships between PACV, PAHM, and PASS.

EIIS codes are shown in the format [EIIS SYSTEM: IEEE component function identifier, second component function identifier (if appropriate)].

Figure 1

