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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-007-00:on 890305,release to chemical treatment pond causes Tech Spec violation.Due to NCS error.W/890404 ltr.
W/8 ltr.

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Oconee Nuclear Station, Unit 1	0 5 0 0 0 2 6 9	1 OF 0 6

TITLE (4) Release to chemical treatment pond results in a condition prohibited by technical specifications.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 3	0 5	8 9	8 9	0 0 7	0 0	0 4	0 4	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
H. R. Lowery, Oconee Safety Review Group	AREA CODE 8 0 3 8 8 5 - 3 0 3 4

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 5, 1989, at 1635 hours, an unintentional release of Polishing Demineralizer resins to the Chemical Treatment Pond (CTP) resulted in violation of Technical Specification 3.9.4.b activity concentration limits. The correct flow path was blocked when the Radwaste Nuclear Chemistry Specialist (NCS) incorrectly aligned valves for the transfer path. The NCS was responsible for the Radwaste control room and did not have any support personnel to assist with the facility operation. A valve to the CTP was also not completely closed due to a valve failure. This was caused by a management deficiency because of lack of adequate policy and resulted in an incorrect flow path for the resins. Due to the above conditions, this event is classified as an inappropriate action due to failure to follow procedures and management deficiency which resulted in a valve failure. There was a contributing cause of Radwaste control room operator burden.

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☆ U.S.GPO:1984-0-454-481/18759

BACKGROUND

The Polishing Demineralizers [EIIS:KD] (Powdex) are used to purify condensate after the Main Turbine [EIIS:TA] has removed the energy from the steam. The purpose of this purification is to maintain the chemistry of the condensate to prevent fouling of the Steam Generators [EIIS:SG] and is accomplished through the use of resin beads which remove impurities. These resin beads are periodically replaced, termed as backwashing, as their ability to remove impurities is depleted. The resin beads are then pumped to the Chemical Treatment Ponds (CTP) or processed in the Radwaste Facility [EIIS:NE]. The Radwaste Facility is utilized to process liquid and solid radioactive waste at the plant. One of the functions of the CTP is as a hold point to allow low level radioactive material to decay prior to being released off-site.

Technical Specification (TS) 3.9.4.b specifies the amount of activity which may be released to the CTP from the Powdex. The ability to release a batch of resin from the Powdex to the CTP is based on the amount of activity which existed in the previously replaced batch of Powdex. If the activity of the previous release was greater than 1.0 x 10E-3 microcuries per milliliter, the TS prohibits the release of the next batch of Powdex to the CTP. TS 3.9.4.a and 3.9.4.c limit the amount of total activity which can be put into the CTPs.

EVENT DESCRIPTION

At approximately 1600 hours on March 5, 1989, Nuclear Chemistry Specialist (NCS) "A" was informed by Nuclear Chemistry Technician (NCT) "A" that one of the Polishing Demineralizers (Powdex) needed to be backwashed. NCT "A" then used CP/0/B/3002/16, "Polishing Demineralizer Operating Procedure", to align the valves for transfer of the resin to the Radwaste Facility for processing. One of the valves which NCT "A" positioned was valve C-102, "Polishing Demineralizers Backwash Sump Discharge", which was to be placed in the closed position. While positioning this valve, NCT "A" inadvertently left the valve approximately 2.5 turns open when the valve seemed to seat but failed to close . After completing the valve lineup as specified in CP/0/B/3002/16, NCT "A" notified NCS "A" in the Radwaste Facility control room that the valve lineup was complete and the transfer of the resin could proceed.

Prior to the start of the resin transfer, NCS "A" had been monitoring another liquid transfer which required the transfer pumps to be manually removed from service. To manually deenergize the pumps, NCS "A" had to leave the Radwaste control room and go down 3 flights of stairs. This was required since Chemistry Supervisor (CS) "A" had assigned one of the

remaining technicians on the shift to cover the Interim Radwaste Building and the remaining technician was assigned to help CS "A" with a task. NCS "A" used CP/0/B/5200/48, "Resin Recovery System Operation", to align Backwash Receiving Tank (BRT) 'B' to receive the Powdex resins. While aligning BRT 'B', NCS "A" incorrectly aligned the valves for the transfer which resulted in blockage of the correct flow path for the resins. NCS "A" then continued monitoring the liquid transfer which had been taking place prior to the start of the resin transfer. NCS "A" did not monitor the BRT 'B' level indications to ensure that the level increased as the resin was transferred since he expected the resin to back up into the sump if there was a problem, at which time NCT "A" would inform him of the problem.

At 1715 hours, CS "A" returned to the Radwaste control room and noticed that the level in BRT 'B' had not increased. He then discovered that the valve alignment was not correct. Upon the discovery of the valve misalignment, CS "A" contacted NCT "A" and NCS "B" to verify the valve alignments at the Powdex. These valve alignments were verified and the partial opening of valve C-102 was not discovered. CS "A" then notified the plant control room and had the Turbine Building sump pump breakers opened. The control room operators also verified that Radiation Monitor 54, "Turbine Building Sump monitor", had not increased or tripped.

At 1750 hours, the Unit 1 and 2 sump was sampled and showed no signs of having received the resin. At 1755 hours, CS "A" notified General Supervisor (GS) "A" of the incident. GS "A" instructed CS "A" to inform Environmental Support of the incident. At 1800 hours, CTP 3 was sampled and showed no signs of having received the resin.

CS "B" and NCS "B" subsequently discovered the partially open path through C-102. Valve C-102 had exhibited problems in the past since a large transfer of cleaning solution had occurred. The transfer of this solution took place from November 1988 through December 1988. Sampling of CTP 2 revealed that the resin had been routed to the CTP through C-102 and that the concentration of activity released was 1.1 x 10E-3 microcuries per milliliter. Various potential release paths were sampled to ensure that there had not been an uncontrolled off-site release. Work Request 87969B was written on March 14, 1989 to repack valve C-102.

CONCLUSIONS

It is concluded that there are two root causes of this event. The first root cause is the misaligned flow path which Nuclear Chemistry Specialist (NCS) "A" performed in the Radwaste control room. This misalignment resulted in the absence of the correct flow path for the transfer of the resin to the Backwash Receiving Tank (BRT). During the investigation of

this event, the layout of the controls which were manipulated in the Radwaste control room were found to be well laid out without any confusion about either flow path or valve numbers. NCS "A" was ETQS qualified on the procedure and stated that he had performed the lineup before. The procedure used for this lineup, CP/0/B/5200/48, was also reviewed and found to be adequate and not confusing. It is therefore determined that the root cause of this event is a result of inappropriate action on the part of NCS "A" due to improperly following the correct procedure.

The second of the root causes was the fact that C-102 was left partially open. This created a flow path for the resin to enter the Chemical Treatment Pond. Had this valve not been left partially open, the pumps would have been deadheaded which would have caused the resin to start filling up the Powdex sump. This would have been noticed by Nuclear Chemistry Technician (NCT) "A" and the transfer would have been terminated until the flow path was corrected. The valve was also checked by other Chemistry personnel prior to being discovered open. The valve had no local indication and the amount which it was left open was a small part of the stem travel. The valve also seemed to bottom out as it would be expected to when reaching the fully closed position. During the course of this investigation, it was discovered that this valve and several other valves have been malfunctioning since a large transfer of cleaning solution. This transfer occurred during processing of the solution used for the cleaning of the Unit 1 and 2 Steam Generators. A work request to repair a packing leak on valve C-102 had been completed on February 10, 1989. However the valve was successfully manipulated several times after the completion of this work request and the time of the event without a problem and Chemistry personnel do not feel that this had any bearing on the failure of the valve in this instance. Since the malfunctioning of this valve and other valves in the flow path were known to Chemistry personnel, this is classified as management deficiency because of lack of adequate policy to repair known valve degradations.

There was a contributing cause because of lack of personnel to support Nuclear Chemistry Specialist (NCS) "A" while operating the Radwaste Facility control room. He was monitoring a transfer which required him to leave the control room at the conclusion of the transfer and take manual action to stop the transfer. He was also handling incoming phone calls to the control room. He was expecting to be notified by NCT "A" in the case of a problem with the resin transfer since any problems would cause the sump level to rise which NCT "A" would report to him.

The need for an Independent Verification of the position of valve C-102 was also explored during the investigation. The position of the Chemistry Section is that the release of resin to the CTP does not constitute an off-site release since the CTPs are not released to the environment until they have met all required specifications. The Station Directives require

the use of Independent Verification when the possibility of an off-site release occurs.

The failure of valve C-102 is not NPRDS reportable. A review of events within the last year did not reveal any similar occurrences, therefore this event is listed as nonrecurring. There were also no radioactive material releases beyond the site boundary, personnel injuries, or radiation exposures as a result of this event, therefore the health and safety of the public was not affected by this event.

CORRECTIVE ACTIONS

Immediate

1. Potential off-site release paths for the resin were sampled and analyzed.

Subsequent

1. Appropriate personnel received disciplinary action.

2. Work Request 87969B was written to repack valve C-102.

Planned

1. Chemistry will initiate action to have valve C-102, and any other valves which have shown signs of degradation since the transfer of the cleaning solution, replaced. This action will be initiated by June 1, 1989.

2. Chemistry will evaluate staffing levels for the Radwaste Facility and determine the minimum number of control room and support personnel for the facility. This will be complete by June 1, 1989.

SAFETY ANALYSIS

The amount of activity released to Chemical Treatment Pond (CTP) #2 was greater than the Technical Specification limits for a batch release of the Polishing Demineralizer resin. However the Technical Specification limit for total activity in the CTPs was not approached. CTP #2 was also not

being released and must meet all applicable specifications prior to any release. The Chemistry procedures do have applicable steps to prevent the release of one of the CTP if a resin transfer is taking place. The valves in the release flow path are chained shut and locked and require Independent Verification before changing the position of these valves. One of the steps prior to opening these valves is to ensure that a resin transfer is not being performed. The CTP is within the site boundary and a release to the CTP does not constitute a release to the environment. Therefore the release of these resins did not constitute or result in a release to the environment.

There were no radiological releases to the environment or personnel injuries as a result of this event and the health and safety of the public was not affected.

Duke Power Company
P.O. Box 33189
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Hal B. Tucker
Vice President
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DUKE POWER

April 4, 1989

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: **Oconee Nuclear Station**
Docket Nos. 50-269, -270, -287
LER 269/89-07

Gentlemen:

Pursuant to 10CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report (LER) 269/89-07 concerning a release to a chemical treatment pond in excess of technical specification limits.

This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Hal B. Tucker/nm

Hal B. Tucker

PJN

Attachment

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