

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Duane Arnold Energy Center	DOCKET NUMBER (2) 05000-331	PAGE (3) 1 OF 3
---	--------------------------------	--------------------

TITLE (4)  
Inadequate Surveillance Testing of Reactor Water Cleanup Area Differential Temperature Isolation Logic Caused by Lack of Attention to Detail when Processing a Technical Specification Amendment.

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 NAME	DOCKET NUMBER
07	24	97	97	-- 009	-- 00	08	21	97		05000-331
									FACILITY NAME	DOCKET NUMBER
										05000-331

OPERATING MODE (9) 1

POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)	50.73(a)(2)(ii)
20.2203(a)(1)	20.2203(a)(3)(i)		50.73(a)(2)(ii)	50.73(a)(2)(k)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71
20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER
20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME John W. Karrick, Licensing Specialist	TELEPHONE NUMBER (Include Area Code) (319) 851-7901
---	--

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION	MONTH	DAY	YEAR
--	---	----	---------------------	-------	-----	------

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On July 24, 1997, during a review of surveillance test procedures for conversion to the Improved Standard Technical Specifications (ITS), a deficiency in an existing procedure was discovered. The procedure for the TS required Channel Functional Test (CFT) for the Reactor Water Cleanup (RWCU) Area Ventilation Differential Temperature-High Isolation was not written to perform the CFT in accordance with the TS definition of a CFT.

The cause of this event was inattention to detail associated with processing and implementation of TS Amendment 193, which was issued on July 21, 1993. This amendment inadvertently deleted an exception footnote for the RWCU Area Ventilation Differential Temperature surveillance requirement. This condition resulted in a failure to fully perform Technical Specification required surveillances and is being reported pursuant to 10CFR50.73(a)(2)(i)(B).

Following discovery, the existing annual channel calibration tests were successfully performed, which fully satisfied the requirements of the CFT. Other corrective actions include revising the procedure to incorporate the CFT definition, Licensing department briefings, and continued reviews of surveillance test procedures as part of the conversion to ITS. The actual and potential safety consequences associated with this event were minimal as all equipment performed properly when tested.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Duane Arnold Energy Center	05000-331	97	-- 009	-- 00	2 OF 3

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**I. DESCRIPTION OF EVENT:**

On July 24, 1997, during a review of surveillance test procedures (STPs) for conversion to the Improved Standard Technical Specifications (ITS), a deficiency in STP 42A016-Q,A, "Reactor Water Cleanup System Leak Detection Instrument Functional Test and Calibration," was discovered. This STP had been credited for implementing the Channel Functional Test (CFT) required by TS Table 4.2-A for the Reactor Water Cleanup (RWCU) Area Ventilation Differential Temperature-High Isolation.

The procedure, which also includes the CFT for RWCU Area Temperature -High, had incorporated an exception to the CFT definition which was approved in the first revision to DAEC TS. From 1974 to 1993, TS Table 4.2-A had listed one line item with a note (8) for both the High Area Temperature and High Ventilation Area Differential Temperature surveillances. Note (8) was the exception which stated "The functional test will consist of comparing the analog signal of the active thermocouple element feeding the isolation logic to a redundant thermocouple element." TS Amendment 193, implemented on July 21, 1993, split the two separate surveillances into two line items in Table 4.2-A and changed note (8) to note (a), but only included the footnote on the line item for the RWCU Area Temperature High surveillance. This essentially deleted the exception for the Differential Temperature surveillance and resulted in a non-compliance that was not detected during the implementation of the amendment.

Upon discovery of this issue, actions in accordance with TS 3.2.A.1.B and Action 23 of Table 3.2-A were taken and a 1 hour Limiting Condition for Operation (LCO) was entered. The annual channel calibrations were performed satisfactorily and the LCO was exited on July 24, 1997.

**II. CAUSE OF EVENT:**

The cause of the event was lack of attention to detail when processing and implementing TS Amendment 193. When the new line item was added for the RWCU Ventilation Area Differential Temperature-High surveillance without the footnote, the change in surveillance requirements was not recognized. TS Amendment 193 included an extensive revision of TS instrumentation tables and surveillance frequencies.

**III. ANALYSIS OF EVENT:**

Upon discovery, the annual channel calibrations for the RWCU leak detection instrumentation, which incorporate full CFTs were performed satisfactorily for both RWCU leak detection channels. The last channel calibration was performed on December 2, 1996, which also demonstrated satisfactory performance of the CFTs.

High differential temperature in the RWCU system equipment room is sensed by six differential-temperature switches. High ambient temperature in the RWCU system equipment room is sensed by six temperature switches. The tripping of either channel initiates the isolation of the cleanup system. The basis for this setting was so that a leak of 8 to 10 gpm would be detected. Additionally, high ambient

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Duane Arnold Energy Center	05000-331	97	-- 009	-- 00	3 OF 3

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**III. ANALYSIS OF EVENT: (continued)**

temperature in the southeast reactor building first floor is sensed by four temperature switches. Two thermocouples are located above the Transverse In-Core Probe (TIP) room mezzanine and two are located above the Control Rod Drive (CRD) master control area for detection of a leak in the RWCU return piping above the TIP room. Sufficient redundant operable leak detection instrumentation existed to ensure the leak detection function was maintained.

The actual and potential safety consequences of this event were minimal. There were no other structures, systems, or components inoperable at the time of discovery that contributed to the event.

**IV. CORRECTIVE ACTIONS:**

1. STP 42A016-Q,A will be revised to incorporate the full CFT for the RWCU Area Ventilation Differential Temperature-High Isolation instrumentation. This action will be completed by September 3, 1997, which is prior to the next scheduled quarterly CFT.
2. Appropriate Licensing personnel have received a briefing regarding best practices and industry techniques regarding attention to detail within the TS Amendment process.
3. As a long term corrective action for this event and as part of an ongoing effort at the DAEC for converting to the ITS, all the ITS required surveillance procedures will receive an equivalent level of review to ensure they meet all requirements. This corrective action will be completed in accordance with the schedule for implementation of the ITS. It should be noted that this event was discovered during the review process for ITS required test procedures.

**V. ADDITIONAL INFORMATION:**

A. EHS System Codes: Reactor Water Cleanup: CE  
Containment Isolation Control System: JM

B. Previous Similar Events:

LER 331/97-007-00 submitted to the NRC on July 24, 1997, by letter number NG-97-1303, documented a review of previous similar events. That review is applicable to this LER. This event was discovered by the ongoing reviews associated with conversion to ITS which is also a previous LER corrective action. Therefore, previous corrective actions, though they have not prevented events of this nature, have been successful in their discovery.

This event is being reported pursuant to 10CFR50.73(a)(2)(i)(B).