

LICENSEE EVENT REPORT (LER)															Form Rev. 2.0												
Facility Name (1) Quad Cities Unit One										Docket Number (2) 0   5   0   0   0   2   5   4					Page (3) 1   of   0   6												
Title (4) A Required Technical Specification (TS) Surveillance Was Not Performed Prior to Reactor Mode Change On Four Occasions Due To Inadequate Procedures Associated With Implementation Of The TS Upgrade Program																											
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	1	7	9	7	9	7	--	0	2	3	--	0	0	1	1	2	5	9	7		0   5   0   0   0					
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																								
POWER LEVEL (10) 7.   7   5			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)												
			20.405(a)(1)(iii)				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 Charles Peterson, Regulatory Affairs Manager, ext. 3609										TELEPHONE NUMBER AREA CODE 3   0   9   6   5   4   -   2   2   4   1																	
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) <input checked="" type="checkbox"/> NO <input type="checkbox"/>																											
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-spaced, typewritten lines) (16)																											

# ABSTRACT:

On four occasions between 031797 and 062297, pre-startup Average Power Range Monitors (APRM) downscale channel functional testing was not performed per TS requirements before entering Power Operations (Mode One) on Units One and Two. This resulted in the units being in a Limiting Condition for Operation (LCO) until weekly at-power surveillance verified the operability of the channel function. Shift personnel were not made aware of this lack of TS compliance until 102997.

The root cause of this event is a cognitive personnel error due to a lack of information validation or verification by the Instrument Maintenance Department personnel responsible for implementing the Technical Specification Upgrade Project (TSUP). Procedure changes were not effectively validated for effect on TSUP and a new procedure that implemented the TS requirement was not properly integrated into existing startup checklists or the Electronic Work Control System.

Corrective actions include incorporating new predefined surveillance work requests and revising station procedures to ensure the TS requirement is performed as specified.

The safety significance to the health and safety of onsite personnel and to the public was minimal. Reactor Protective System (RPS) logic exists through the corresponding Intermediate Range Monitor (IRM) to provide a rod block and a trip signal as needed.

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

**PLANT AND SYSTEM IDENTIFICATION:**

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power.

**EVENT IDENTIFICATION:** A Required Technical Specification (TS) Surveillance Was Not Performed Prior to Reactor Mode Change On Four Occasions Due To Inadequate Procedures Associated With Implementation Of The TS Upgrade Program

**A. CONDITIONS PRIOR TO EVENT:**

Unit: 1                      Event Date: 031797                      Event Time: 1122  
 Reactor Mode: 2            Mode Name: Startup                      Power Level: 7.75

This report was initiated by Licensee Event Report 254\97-023.

Startup (2) - Mode switch in Startup/Hot Standby position with average reactor coolant temperature at any temperature.

Plant conditions prior to the first occurrence are shown above. There were three additional times that the units entered a LCO without the on-shift Operations personnel being knowledgeable, as described in the Description of Event Section of this report.

**B. DESCRIPTION OF EVENT:**

On 043096, station procedure QCIS 0700-09, "Prior to Startup Neutron Monitoring Functional Test," was revised (revision 07), adding steps to perform Average Power Range Monitors (APRM) [IG]downscale channel functional testing in a prior-to-startup condition. This was to address new requirements that would be implemented as part of the Technical Specification Upgrade Program (TSUP) planned for implementation in September, 1996. Verification of accomplishment of QCIS 0700-09 prior to startup was contained in QCGP 1-4, "Minimum Start-Up Checklist," and QCGP 1-5, "Master Start-Up Checklist."

On 070196, revision 08 to QCIS 0700-09 was implemented which removed the steps to perform the APRM downscale channel functional test. The reason cited was lack of current Technical Specification (TS) requirements to perform this testing prior-to-startup. The revision, while removing the applicable procedure steps, did not revise the discussion section, which indicated the procedure accomplished the APRM downscale functional testing per TSUP requirements.

On 090996, new station procedure QCIS 0700-11, "Prior to Startup APRM Downscale Control Rod Block Functional Test," was implemented to support the upcoming implementation of TSUP since the steps no longer existed in QCIS 0700-09. No action was taken to revise QCGP 1-4 and QCGP 1-5 to reflect that QCIS 0700-11 needed to be performed prior to unit start-up. Neither the General Surveillance program (GSRV) nor Electronic Work Control System (EWCS) were amended to include QCIS 0700-11 as a surveillance that needed to be performed prior to start-up.



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On 092396, TSUP was implemented establishing the new requirement for the APRM downscale channel functional test within seven days prior to startup (TS Table 4.2.5-1,2.c.).

During the period 031697 through 062297, three Unit One (U-1) and one Unit Two (U-2) reactor startups were performed which resulted in the units being taken to Mode One without performing the pre-startup APRM Downscale Control Rod Block Functional check required by TS. Because operability for this functional unit had not been verified, the units were in a LCO as per TS 3.2.5-1 Action 51 from the time the Mode switch was taken to RUN until such time as routine at-power surveillance (QCIS 0700-07, "Power Operation APRM Functional Test") verified operability. Dates and times for each occurrence are shown below:

UNIT	Startup/entry into Mode One: date/time	Performance of QCIS 0700-07: date/time	Duration of LCO
1	031797, 1122	031897, 1600	28 hours, 38 min
1	032997, 0215	040197, 1000	79 hours, 45 min
1	042497, 2308	042997, 1310	110 hours, 02 min
2	062197, 2310	062697, 1245	109 hours, 35 min

On 101697, an Instrument Maintenance first line supervisor noted that QCIS 0700-09 failed to check the APRM downscale control rod block in a prior to start-up condition. Problem Identification Form (PIF) 97-3912 was initiated identifying the possibility of a missed TS requirement. After further investigation, PIF 97-4121 was originated on 102997 and was categorized as a Licensee Event Report (LER).

#### C. CAUSE OF THE EVENT:

The root cause of this event is a cognitive personnel error due to a lack of information validation or verification by the Instrument Maintenance Department (IMD) personnel responsible for implementing TSUP during the procedure revision process. This resulted in the startup checklists referring to a procedure that did not contain the necessary steps to perform the functional test of the APRM downscale control rod block as required by TS.

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#### D. SAFETY ANALYSIS:

The safety significance of the event was minimal. This TS surveillance is performed to verify APRM downscale rod out block functionality and is only applicable to Mode One operation. In the RUN mode, the APRMs are used to monitor rod withdrawal. To ensure continuous monitoring and protection from fuel damage, a RPS logic link exists that when an APRM is downscale, the corresponding IRM in that channel will provide a rod out block at its high setting, and a trip signal if it is high-high or inoperative.

In considering the safety significance, the pertinent scenario involves withdrawing a control rod, which then results in a reactor power increase, with the APRMs subsequently coming off their downscale. In this case, failure to verify the rod out block when the APRMs are downscale would have no safety effect. The IRM scram in RUN is anticipatory in nature; it occurs when the flux increases by more than a factor of ten. For a power increase the trip signal would come from the flow-biased APRM scram. This, too, is set to prevent fuel and cladding damage. Thus, as there is no reliance on this combination of APRM and IRM system design feature in any transient or accident, there is no safety implication.

The only impact would be if the IRMs were not inserted. Typically the IRMs are withdrawn from core around nine percent power, with the APRMs well above their downscale. Any scenario resulting in a power decrease to below the APRM downscale (i.e., below three percent power) would then have the Nuclear Station Operator (NSO) taking readings off of IRMs that would be indicating lower (yet still monitoring the core) than they would be if they were fully inserted. This scenario is considered only for its operational consideration; there is no safety impact.

#### E. CORRECTIVE ACTIONS:

##### Corrective Actions Completed:

1. QCIS 0700-07 was performed verifying the required TS operability of the APRM downscale rod block function after each affected startup (after transition from Startup [mode 2] to Run [mode 1]) on U-1 and U-2.
2. Predefine work requests were created in EWCS for QCIS 0700-09 and 0700-11 for both units requiring performance prior to unit start-up.
3. Root Cause Investigation (PIF 97-3147, NTS# 25420097SCAQ00088) was performed and completed on 111097 due to a noted adverse trend in TS noncompliances prior to identification of this event.
4. The personnel error was reviewed with the responsible individual who acknowledged his role in this event.



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### Corrective Actions to be Completed:

1. Revise QCGP 1-4 and 1-5 to require that QCIS 0700-11 be performed within 7 days prior to start-up (NTS# 254-180-97-SCAQ0002301, Operations Department).  
Due date: 121597
2. Revise QCIS 0700-09 to delete the words indicating that the procedure functionally tests the APRM downscale control rod block (NTS# 254-180-97-SCAQ0002302, Maintenance Department). Due date: 121597
3. Revise QCAP 1100-04, "Procedure Revision, Review and Approval," to require that each procedure revision be reviewed for possible effect or incision as a predefine in EWCS. (NTS# 254-180-97-SCAQ0002303, Administrative Department).  
Due date: 123197
4. Revise QCAP 1100-04 by 123197 to ensure a detailed cross-discipline review for Technical Specification (TS) compliance is included for all changes to procedures implementing TS 4.0 to 4.12 requirements. (NTS# 254-180-97-SCAQ0002304, Administrative Department). Due date 123197

### F. PREVIOUS OCCURRENCES:

A search was conducted for LERs at Quad Cities Station since December, 1995 that resulted from procedure inadequacies resulting in TS violations.

- LER 254/96-014, "Electrical distribution weekly surveillance did not document voltage verification in accordance with Technical Specification 4.9.E. due to an inadequate procedure."
- LER 254/96-024, "The control room heating and ventilation and air conditioning isolation system was inadequately tested due to a cognitive personnel error, which resulted in credit being taken for a Technical Specification requirement by a procedure that did not contain steps to satisfy that Technical Specification requirement."
- LER 254/97-001, "Technical Specification required instrumentation readings were not completed within the required time frequency after changing from eight hour to twelve hour shifts because the consequences associated with changing shift duration were not adequately reviewed or assessed."
- LER 254/97-018, "Surveillance was not properly performed due to inadequate procedure development and review during implementation of upgraded Technical Specifications."

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These four events were originally thought to be isolated in nature and individual corrective actions were assigned. An adverse trend in TS surveillance compliance was identified and investigated which indicated that additional actions were necessary. (Reference Root Cause Investigation PIF 97-3147, NTS# 254-200-97-SCAQ00088).

G. COMPONENT FAILURE DATA:

Not Applicable.