



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23185
ATLANTA, GEORGIA 30303-8931

October 31, 2007

MEMORANDUM TO: Michael Ernstes, Branch Chief
Reactor Safety Training and Development Branch
Division of Reactor Projects

FROM: William D. Travers, Regional Administrator **/RA/**

SUBJECT: SUPPLEMENTAL AUGMENTED INSPECTION TEAM CHARTER TO
EVALUATE A FARLEY 1B RESIDUAL HEAT REMOVAL (RHR) PUMP
4.16-kV BREAKER FAILURE

You have been selected to lead a continuation of an Augmented Inspection Team (AIT) to assess the circumstances surrounding 4.16-kV breaker failures at Farley Unit 1. Your inspection should begin on October 22, 2007. Steve Alexander and Russ Lewis will be assisting you in this effort. The need for additional technical support to the team in the area of 4.16-kV breaker design and operation should be evaluated during the initial portion of the inspection. Walt Rogers will provide Senior Reactor Analyst support.

A. Basis

On September 14, the NRC completed the on-site portion of an Augmented Inspection at the Farley Nuclear Plant (FNP), Units 1 and 2. This original AIT reviewed two coincident failures of safety-related 4.16-kV breakers at FNP. Specifically, on September 4, 2007, in support of planned maintenance on the 1B component cooling water (CCW) pump, the licensee needed to start the 1C CCW pump (Train 'A'), when the licensee attempted to manually start the 1C CCW pump from the control room, its Cutler-Hammer breaker failed to close. Then on September 5, 2007, during post-maintenance testing of the 1B CCW pump, the licensee attempted to start the 1A CCW pump (Train 'B'). The 1A CCW pump Allis-Chalmers breaker also failed to close when manually started from the control room.

Onsite inspection activities were completed for the original AIT on September 14, 2007. Subsequently, on October 16, 2007, the 1B RHR pump failed to successfully start on two individual attempts. Preliminary indications are that the recently installed Cutler-Hammer breaker failed to function. The 1B RHR pump was being started to support restoring lower internals into the vessel. The pump had been successfully started at 9:30 a.m., on October 16, 2007, and operated for five hours to support reactor cavity chemistry sampling prior to these start failures.

Unit 1 was in a defueled mode during the failure of the recently installed Cutler-Hammer breaker. Therefore, the 1B RHR pump was not required for system operability when the breaker failure occurred. Unit 2 was operating at approximately 100 percent power.

A conference call was held October 18, 2007, between NRR, OE, RII, and NSIR to discuss the most recent 1B RHR breaker failure. It was concluded that the NRC would amend the original AIT Charter to extend the inspection to include a review of the most recent failure.

The extended AIT will review the root cause of the most recent failure and other replacement breaker installation issues to determine whether any represents a failure mode different from those identified during the original AIT and review the extent of condition for this recent failure and any other conditions which could affect the operating unit.

A recent 95001 inspection regarding breaker failures was conducted and documented in NRC Inspection Report 348,364/2007-008. This report should be referenced for key background information regarding other historical 4.16-kV breaker issues at the Farley site.

A Preliminary Notification (PN) and press release were issued on October 23.

B. Scope

The inspection is expected to perform data gathering and fact-finding in order to address the following:

1. Develop a complete description of the 1B RHR 4.16-kV breaker failure on October 16, 2007, and a complete sequence of events related to the breaker failure.
2. Determine probable cause(s) for the 1B RHR pump 4.16-kV breaker failure on October 16, 2007, as well as the conditions and circumstances relevant to issues directly related to the event.
3. Compare the failure mechanism for the 1B RHR pump breaker to the root causes for the original AIT failures involving CCW breakers to evaluate whether it represents a failure mode different from those identified during the original AIT.
4. Review the maintenance program for the 4.16-kV breakers, specifically those which could have led to the identified failure mechanism.
5. Review the corrective actions (CAs) and maintenance work order databases to determine the failure history of recently installed Cutler-hammer 4.16-kV breakers.
6. Monitor the licensee's root cause analysis and extent of condition for thoroughness. Assess the adequacy of the licensee's implemented and/or planned CAs to address the root cause and the time line for completing the CAs on both units.
7. Assess if any common mode failure modes have been established for both Unit 1 and Unit 2, if they are being addressed by the licensee, and what generic implications may exist.
8. Assess the adequacy of the licensee's operability determination for similar Cutler-Hammer 4.16-kV breakers installed on Unit 2.

9. Review industry operating experience (OE) and licensee's actions in response to any related OE items.
10. Collect data necessary to develop and assess the safety significance of any findings in accordance with IMC 0609, "Significance Determination Process."
11. Identify any potential generic safety issues and make recommendations for appropriate follow-up actions (e.g., Information Notices, Generic Letters, Bulletins).

C. Guidance

Inspection Procedure 93800, "Augmented Inspection Team," provides additional guidance to be used during the conduct of the Augmented Inspection. Your duties will be as described in Inspection Procedure 93800. The inspection should emphasize fact-finding and determination of probable cause(s) in its review of the circumstances surrounding the event. Safety or security concerns identified that are not directly related to the event should be reported to the Region II office for appropriate action.

It is anticipated that the on-site portion of the inspection will be completed during the week of October 26, 2007. A status briefing of Region II management will be provided the second day on-site at 4:00 p.m., (EDT). The results of this inspection may be documented with the original AIT Chartered inspection which began on September 10, 2007, and should be issued within 30 days of the completion of this inspection.

This Charter may be modified should you develop significant new information that warrants review. Should you have any questions concerning this Charter, contact Scott M. Shaeffer at (404) 562-4521.

Docket Nos.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

cc: W. Kane, OEDO
B. Mallett, OEDO
L. Trocine, OEDO
E. Marinos, NRR
M. Ross-Lee, NRR
K. Cotton, NRR
R. Martin, NRR
J. Shea, RII
C. Casto, RII
V. McCree, RII
S. Shaeffer, RII

9. Review industry operating experience (OE) and licensee's actions in response to any related OE items.
10. Collect data necessary to develop and assess the safety significance of any findings in accordance with IMC 0609, "Significance Determination Process."
11. Identify any potential generic safety issues and make recommendations for appropriate follow-up actions (e.g., Information Notices, Generic Letters, Bulletins).

C. Guidance

Inspection Procedure 93800, "Augmented Inspection Team," provides additional guidance to be used during the conduct of the Augmented Inspection. Your duties will be as described in Inspection Procedure 93800. The inspection should emphasize fact-finding and determination of probable cause(s) in its review of the circumstances surrounding the event. Safety or security concerns identified that are not directly related to the event should be reported to the Region II office for appropriate action.

An entrance interview will be conducted once you begin the inspection on October 22, 2007. It is anticipated that the on-site portion of the inspection will be completed during the week of October 26, 2007. A status briefing of Region II management will be provided the second day on-site at 4:00 p.m. (EDT). The results of this inspection may be documented with the original AIT Chartered inspection which began on September 10, 2007 and should be issued within 30 days of the completion of this supplementary inspection.

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ADAMS: X Yes ACCESSION NUMBER: _____

OFFICE	RII:DRP	RII:DRS	IOEB	RII:DRP	NRR	NSIR
SIGNATURE	SMS /RA/	KMK /RA for/		CAC /RA/		
NAME	SShaeffer	JShea	MRoss-Lee	CCasto	TMcGinty	TBlount
DATE	10/22/2007	10/26/2007		10/22/2007		
E-MAIL COPY?	YES	YES	YES	YES	NO	YES NO