

June 28, 2012

MEMORANDUM TO: Rani Franovich, Chief
Performance Assessment Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FROM: Audrey Klett, Performance Indicator Lead **/RA/**
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SUBJECT: SUMMARY OF MAY 31, 2012, TELEPHONE CALL WITH
INDUSTRY TO DISCUSS ROP PI FAQ 12-03

On Thursday, May 31, 2012, U.S. Nuclear Regulatory Commission (NRC) staff held a teleconference with staff from the Nuclear Energy Institute (NEI) and Florida Power & Light Co. (FP&L) to obtain additional information regarding the St. Lucie Plant operators' response to a scram that occurred on March 31, 2012. The teleconference was held to support resolution of a Reactor Oversight Process (ROP) performance indicator program frequently asked question (FAQ). FAQ 12-03 was submitted to the NRC during an ROP working group public meeting held on May 2, 2012 (ML12144A235). NEI staff provided the NRC a revision of the FAQ on May 31, 2012 (ML12153A230) after this teleconference. NEI staff also provided comments to NRC staff on a draft version of this summary (ML12180A066).

NRC staff requested that FP&L staff discuss actions taken and decisions made pertaining to the emergency operating procedures (EOPs) used following the scram. The EOPs referenced during the teleconference were EOP-01, "Standard Post-Trip Actions," EOP-02, "Reactor Trip Recovery," and EOP-05, "Excess Steam Demand (ESD)."

NRC staff requested FP&L staff to summarize the actions and decisions made in EOP-01 while focusing on issues involving reactor coolant system (RCS) temperature. FP&L staff confirmed that plant equipment was restoring RCS average temperature (T_{avg}) to between 525 and 535 degrees Fahrenheit (°F) during implementation of EOP-01. FP&L staff confirmed that all the questions on the left side of the EOP-01 diagnostic flowchart were answered, "yes;" therefore, operators were able to transition to EOP-02 without having to use another optimal recovery procedure prior to entering EOP-02. FP&L staff stated that the optimal recovery procedures consisted of EOP-02 through EOP-10.

NRC staff asked FP&L staff to describe the decision-making basis used while the operators were in EOP-02 regarding the transfer to EOP-05. NRC staff referenced EOP-02, Step 4.0.1, "Confirm Diagnosis," which requires operators to verify that uncomplicated Reactor Trip Safety Function Status Check acceptance criteria are satisfied every 15 minutes. Because St Lucie operators did not meet the criteria for RCS temperature, they had to follow the contingency action for that step, which directs operators to (1) re-diagnose the event using the EOP-01

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Diagnostic Flow Chart and (2) go to one of the following procedures: the appropriate Optimal Recovery Procedure or EOP-15, "Functional Recovery." NRC staff asked FP&L staff why they decided to transition to EOP-05. The operators indicated that EOP-05 was appropriate because one of its entry criteria is that an ESD has occurred, and that the EOP would be used to confirm that an ESD did or would not recur. An ESD had occurred and terminated when the bypass valve closed shortly after the reactor trip. FP&L staff also stated that because the safety function status criteria were not met in EOP-02, the operators would choose a procedure in which the safety function status criteria of that procedure would be met. NRC staff asked FP&L staff why EOP-02 requires that RCS temperature be within a band of 525 - 535 °F. FP&L staff responded that the low end of that temperature band serves to confirm that an excess cool-down is not in progress and that the upper band serves to confirm that there is not a loss of the heat sink.

NRC staff asked FP&L staff to describe the decisions made while in EOP-05 regarding the step that required operators to verify Safety Function Status Check acceptance criteria were satisfied every 15 minutes. EOP-05, Attachment 1, "Safety Function Status Check Sheet," Step 6 required that RCS T_{cold} be "stable or lowering." NRC staff asked FP&L operators about the decision basis for determining that the safety function status check criterion for RCS temperature was met given that the step requires RCS temperature to be stable or decreasing whereas the desired response of RCS temperature was to increase. FP&L staff responded that "stable" meant under control or performing as expected and not necessarily remaining at or near a constant temperature value. NRC staff asked FP&L staff to confirm the purpose of the EOP-05 safety function status check for RCS temperature. FP&L staff stated that the requirement for RCS temperature to be stable or lowering was to avoid a pressurized thermal shock (PTS) concern in the event that an excessive steam demand event was ongoing. However, because T_{cold} did not drop to a level of concern for PTS, the requirement to keep temperature lowered was not appropriate. Consequently, the operators concluded that "stable" was met by the temperature slowly restoring to within the appropriate band.

Finally, FP&L reiterated that the only reason for entry into EOP-05 was that EOP-02 requirements were not met; therefore, the operators selected the most appropriate EOP. EOP-01 allows for RCS temperature to be within the band or being restored (i.e., "ENSURE SBCS or ADVs are restoring RCS T_{avg} to between 525 and 535°F") while EOP-02 requires RCS temperature to be within the band ("RCS T_{avg} 525 to 535°F").

List of attendees:

NRC:

Audrey Klett, NRR/DIRS/IPAB
Chris Cowdrey, NRR/DIRS/IOEB
Steven Rose, R2
Malcolm Widmann, R2
Philip Capehart, R2
Craig Kontz, R2
Tim Hoeg, R2
Roger Reyes, R2
Michael Donithan, R2

Industry:

Jim Slider, NEI
Steve Catron, FP&L

Eric Katzman, FP&L
Paul Rasmus, FP&L
Ken Frehafer, FP&L

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SRose	MWidmann	PCapehart
THoeg	RReyes	MDonithan
JMunday	WJones	HChristensen
GHopper	MKing	JQuinones-Navarro
LCruz	MBalazik	DRich

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