

April 14, 2003

MEMORANDUM TO: John A. Nakoski, Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Christopher Gratton, Sr. Project Manager, Section 1 /*RA*/
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SURRY POWER STATION, UNITS 1 AND 2 - FACSIMILE
TRANSMISSION OF ISSUES TO BE DISCUSSED IN A
CONFERENCE CALL (TAC NOS. MB6752 AND MB6753)

A facsimile of questions to support a future conference call with the licensee regarding the licensee's submittal dated November 5, 2002, was transmitted to the licensee on April 10, 2003, to Mr. Gary Miller of Virginia Electric and Power Company. In their November 5 submittal, the licensee proposed to modify the technical specification regarding the monthly analog rod position test. This memorandum and the attached questions do not convey or represent an NRC staff position regarding the licensee's request.

Docket Nos. 50-280 and 50-281

Attachment: Request for Additional Information

CONTACT: Christopher Gratton, NRR
(301) 415-1055

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TRANSMISSION OF ISSUES TO BE DISCUSSED IN A
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ACCESSION NUMBER: ML031010197

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OFFICE	PM/PD2-1	LA/PD2-1	SC/PD2-1
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DATE	4/11/03	4/11/03	4/14/03

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REQUEST FOR ADDITIONAL INFORMATION
RELATING TO PROPOSED AMENDMENTS TO RENEWED LICENSE
NOS. DPR-32 AND DPR-37
VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
DOCKET NUMBERS 50-280 AND 50-281

1. In the original submittal, Surry stated that “A digital upgrade modification to the Rod Position Indication (RPI) System is being implemented during the next refueling outage in each unit, thus making the monthly analog rod position test no longer necessary.” The staff needs to understand why implementation of the digital system makes the monthly test unnecessary. In order to understand this, the staff needs to understand what condition was verified by the monthly rod position test, and how the self test of the digital RPI verifies the same condition. In the first request for additional information (RAI), the staff asked:

“If Surry is trying to justify elimination of surveillances based on digital system self testing, it is critical to know just what that self-testing actually tests, and how these tests verify the same items which the surveillances verify. It is also critical to determine that the self test actually tests those things it is supposed to test.”

The licensee’s February 14, 2003, RAI response did not answer the questions. In particular, the staff does not understand the reply to question 1 of the first RAI. Subsection (a) of that question asked for “A list of all diagnostic tests, and what functions are tested.” The staff still fails to understand how the digital diagnostic tests will test the non-digital portions of the systems, such as the rod position detectors and the temperature compensation signal for those detectors.

- a. Please provide documentation on how these functional tests were performed by the original individual rod position indication (IRPI) system (if applicable) and how these functional tests will be performed by the replacement Computer Enhanced Rod Position Indication (CERPI) system.
- b. Since these functions are not part of the Common Q normal self check features, and since the CERPI system, being a non-safety system, is not subject to the Common Q quality control and V&V procedures, please provide documentation of Surry’s verification and validation and quality control (QC) programs which were used when these the plant specific functions were developed. The staff understands that these programs will not be as rigorous as those required for a safety related system, but there must have been some means used by the Surry engineering staff to assure themselves that the functions will perform as designed.

ATTACHMENT

2. The concept of elimination of surveillances based upon diagnostic online tests performed by the Common Q system is based in part on detailed review of the Common Q hardware and software. Extending this concept to a non-safety system based on similar components as the Common Q will depend to some degree on how similar the CERPI is to the Common Q.
 - a. Are the Advant S 600 model AO 610 analog output module and the Allied Telesyn model AT-MC 102XL fiber optic modem for Fast Ethernet the only components used in the CERPI system that are not Common Q components?
 - b. Please include a list of industry standards used in the design, test and qualification of these non Common Q components. Have these standards been endorsed by the NRC?
 - c. For the portions of the system which are similar to the Common Q components, please compare the revision levels of the CERPI components to the Common Q components. For any which are different, please explain the differences.
 - d. Are all software components exactly as reviewed for the Common Q system. Please compare the revision levels of the CERPI software components to the Common Q software components. For any which are different, please explain the differences.
 - e. Please list any other software used in the CERPI system which was not reviewed and approved with the Common Q. As in question 1b above, please provide documentation of Surry's verification and validation and QC programs which were used when these the software components were developed.
3. In the original submittal, Surry states that:

“The rod position signal is then compared to a rod bottom setpoint that is a digital input to the [programmable logic controllers] PLCs via an interface on the maintenance and test panel (MTP) that will be located in the IRPI system cabinets.”

Since this rod bottom setpoint seems to be used to generate an alarm, we would like to know how the rod bottom setpoint is generated on the CERPI? Please include a description of the interface on the MTP (ie. keypad, keyboard, dip switches). Identify any analog inputs to the setpoint. If there are analog inputs, list the sampling rate and the reason this is sufficient.

- a. Where in memory is the setpoint stored (ie. EPROM, RAM)? How is this portion of memory protected?
- b. How is the value stored by the system verified? Is this an actual verification of the value, or is the check only a checksum or cyclic redundancy check (CRC)? How often is it verified?
- c. What is the value of the setpoint which will be used and how was it determined?

- d. Please provide the documentation of the plant specific code to actuate the alarm.
- 4. Is the rod bottom bistable being eliminated? Please provide a line drawing or schematic of the new system, showing the parts of the old system will be kept in service, and how they interface with the new computer enhanced system. Please show the interface with the maintenance test panel, and the rod bottom bistable.
- 5. In order for the staff to understand why the monthly surveillance can be eliminated, it is necessary for the staff to understand the reason why the surveillance was initially required. Is this reason documented in the TS bases or in licensee controlled documentation? If so, please provide a copy of this documentation.