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**Date:** 1/20/06 1:14PM  
**Subject:** Draft response to LOCA/LOOP questions

Rich

Here are PPL's draft responses to the reviewers questions on LOCA/LOOP testing. Wednesday (1/25) or Thursday (1/26) of next week would be the best time for a phone call.

Neil

<<Response to e-mailed NRC Questions Rev 1.doc>>

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**Subject:** Draft response to questions on LOCA/LOOP testing  
**Creation Date:** 2/17/06 9:29AM  
**From:** "Coddington, Cornelius T" <[ctcoddington@pplweb.com](mailto:ctcoddington@pplweb.com)>

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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	774	02/17/06 09:29AM
TEXT.htm	1470	
PLA-zzzz.doc	47104	
Mime.822	69098	

**Options**

**Expiration Date:** None  
**Priority:** Standard  
**Reply Requested:** No  
**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard

## Response to NRC Questions on LOCA/LOOP TS Change

### Question:

In support of their review of the subject amendment (PLA-5869), the Electrical Engineering Branch requests to have a discussion with your technical group. The questions are (1) why do two load groups have to be de-energized in order to perform SR 3.8.1.19. Why can't one load group be de-energized to perform the SR? (2) Do 2 EDGs have to be in an LCO to perform this SR?

### Response (1):

It is possible to perform the LOCA/LOOP surveillance one load group at a time. However, testing in this manner does not adequately test the design of the plant as adverse interactions between the load groups would not be detectable. The design of the plant for a LOCA/LOOP relies upon the emergency diesel generators to all start and load onto their respective 4kV ESS bus in each Unit. Design features exist that preclude adverse interaction between any of the load groups. Testing a division (2 load groups) at the same time, verifies that there is no adverse interaction between the 2 load groups.

### Response (2):

During this testing, all emergency diesel generators (EGD) are operable. Should an event occur the EDGs are capable of loading onto the required number of Unit 1 and Unit 2 (operating unit) buses and accepting the required loads.

During the performance of the LOCA/LOOP surveillance, the following are the Unit 2 Technical Specification Impacts:

- U2 TS 3.8.1, AC Sources Operating, Condition A - for loss of one offsite source since one of the two offsite sources' 4kV supply breakers are disabled.

Action: Restore offsite source within 72 hours

- U2 TS 3.8.7, Distribution Systems Operating, - for the momentary loss of 2 Unit 1 4kV ESS Buses while they are being loaded onto the EDGs. Since there are no Conditions in TS 3.8.7 that apply to the loss of 2 Unit 1 4kV ESS Buses, LCO 3.0.3 is entered.

Action: Enter LCO 3.0.3 (reason for Tech Spec change)

- U2 TS 3.5.1, ECCS-Operating, - {only during Division I testing} for the loss of one Core Spray loop on Unit 2. SSES is designed to withstand a LOCA simultaneous with a loss of offsite power assuming the most severe active single failure. This means the plant must withstand a LOCA on one unit combined with a

Response to NRC Questions on LOCA/LOOP TS Change (Continued)

false or spurious LOCA signal on the non-accident unit. Interlocks between the Unit 1 and Unit 2 Core Spray Systems prevent electrical system overloads by limiting the number of CS pumps that can start because of a LOCA/False LOCA signal.

Any time a LOCA signal (low reactor water level or high drywell pressure combined with low reactor pressure) is generated in Unit 1, a trip signal is sent to Unit 2 CS pumps A and C. Similarly, if a LOCA signal is generated in Unit 2, Unit 1 CS pumps B and D receive a trip signal. The pumps receiving a trip signal are also prevented from starting. Therefore, a LOCA in one unit and a false LOCA signal in non-accident unit will start A and C CS pumps on Unit 1 and the B and D CS pumps on Unit 2. A single LOCA signal on either unit will start all four CS pumps of the affected unit and will trip and prevent operation of two CS pumps of the unaffected unit.

See FSAR Section 7.3.1.1a.1.5 for a description of the Core Spray system instrumentation and controls.

Action: Restore Core Spray Loop A within 7 days

- U2 TS 3.3.8.1, Loss of Power (LOP) Instrumentation, because the LOP instrumentation is jumpered out during the test.

Action: Restore LOP instrumentation within one hour. (Reason for Tech Spec change)

All other equipment needed to support Unit 2 operation remains operable during this surveillance test. In addition, the surveillance procedure provided guidance to the operator on restoring the systems should an event occur.