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SEP 06 1984

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket Nos.: 50-352
50-353

Subject: Limerick Generating Station, Units 1 and 2
Use of Lifted Leads and Jumpers During
Maintenance or Surveillance Testing

References: (1) Letter, J. S. Kemper to A. Schwencer, dated July 25, 1984.
(2) Telecon, NRC-PECO, dated August 29, 1984.
(3) Telecon, PECO-NRC, dated September 4, 1984.

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

The reference 1 letter expanded and updated the discussion of Limerick's conformance to Regulatory Guide 1.118 to reflect the need to use lifted leads and jumpers during maintenance and surveillance testing, and to reflect the additional guidance provided by IE Information Notice 84-37. The reference 2 telecon identified specific difficulties with the revised information and established a schedule for the resolution of these difficulties. In reference 3 telecon each of these difficulties was discussed and resolved.

The attached draft FSAR pages reflect the agreements reached on each of these items. These draft FSAR pages will be incorporated into the FSAR via Revision 37 which will be submitted in October, 1984.

Sincerely,

J. W. Gallagher
for
J. S. Kemper

DFC/gra/09058407

cc: See Attached Service List



B001
1/1

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Sheet 1 of 3

DRAFT

QUESTION 421.36

The FSAR information which discusses conformance to Regulatory Guide 1.118 and IEEE 338 is insufficient. Further discussion is required. As a minimum, provide the following information:

a) Section 7.1.2.5.26 of the FSAR states that the removal of fuses and other equipment not hard-wired into the protection system will be used only for the purpose of deactivating I&C circuits. Identify where procedures require such operation. Provide further discussion to describe how the Limerick procedures for the protection systems conform to Regulatory Guide 1.118 (Rev. 1) Position C.6 guidelines. Identify and provide justification for any exceptions.

b) Discuss response time testing, including sensors, for the NSSS and BOP supplied instruments and systems in relation to the guidance provided in R.G. 1.118 and IEEE 338, Section 6.3.4. Include in your discussion the effects of thermo wells, restrictions, orifices, or other interfaces with the process variable and the sensor or instrument in relation to the overall response.

c) Provide examples and descriptions of typical response time tests for RPS and ESF systems.

RESPONSE

DRAFT

Evaluation of the systems to be surveillance tested has determined that the actions required will include opening of circuit breakers. This action is required in a limited number of cases. The circuit breakers will be opened during monthly testing but will also bring up an out-of-service alarm that will not clear with the breaker open.

INSERT

Sensor response time testing for pressure and differential pressure (level) sensors for the reactor protection system will be performed using a precise hydraulic pressure signal as the input. Response of the sensor output and the final actuation device will be measured. Neutron detectors are exempt from response time testing; response time will be measured from the input of the first electronic component in the channel. Except for the MSIVs, individual sensor response times and logic system response times are not required for isolation systems because the signal delay (sensor response) is concurrent with the 13-second diesel startup. (Refer to GE Standard Technical Specification 3/4.3.2 Isolation Actuation Instrumentation)

Insert, Page 421.36-1

Lifting of leads will be required in order to perform a limited number of the surveillance tests. Each of these tests, however, will follow the guidance provided by IE Information Notice No. 84-37, dated May 10, 1984. No scheduled surveillance tests which require lifting of leads, except for those tests which involve thermocouples[1], will be performed while the unit is at power.

Specifically, the procedures for these tests will include detailed instructions explicitly requiring the reconnecting of the lifted leads following the completion of the surveillance. This procedural step will be documented by a sign-off sheet to be initialled by the tester when the lifted leads have been connected. Following this, a seperate verification sheet will be initialled to confirm that an independent inspection has been made and that the lifted leads have been returned to service. Finally, functional tests designed to verify the restoration of proper system configuration will be performed.

The lifting of leads will be limited to serveillance tests that fall into one of the four categories below:

1. Tests that involve thermocouples,
2. Tests that require the introduction of test equipment into the instrument channel being tested,
3. Tests, on extensive systems that would otherwise become unnecessarily large and complex, and
4. Tests on systems or components for which the plant design permits no other reasonable alternative.



Footnote to 421.36

(1) Experience has shown that there are no technically acceptable alternatives to lifting thermocouple leads. The introduction of test switches would add resistivity problems which degrade the thermocouple channel.

Examples of typical time tests for RPS and ESF systems cannot be provided because no response time procedures are written at this time.



INSTRUMENTATION BASES

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the operability trip setpoints and response times for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required surveillance. Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the system involved.

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For dc operated valves, a 3-second delay is assumed before the valve starts to move. For ac operated valves, it is assumed that the ac power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the dc operated valve is assumed; thus the signal delay (sensor response) is concurrent with the 13-second diesel startup. The safety analysis considers an allowable inventory loss in each case, which in turn determines the valve speed in conjunction with the 13-second delay. It follows that checking the valve speeds and the 13-second time for emergency power establishment will establish the response time for the isolation functions. However, to enhance overall system reliability and to monitor instrument channel response time trends, the isolation actuation instrumentation response time shall be measured and recorded as a part of the isolation system response time.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the operability requirements, trip setpoints, and response times that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.