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ENERGY**

**PERRY NUCLEAR POWER PLANT**

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VICE PRESIDENT - NUCLEAR

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U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Perry Nuclear Power Plant  
Docket No. 50-440  
Response to Generic Letter 92-04  
Resolution of the Issues Related to  
Reactor Vessel Water Level  
Instrumentation in BWRs Pursuant to  
10 CFR 50.54(f) (Generic Letter 92-04)

Gentlemen:

The attachment represents the result of our review of Generic Letter 92-04 for the Perry Nuclear Power Plant (PNPP), Unit 1, and includes our response to the requested actions contained in the Generic Letter.

If you have any questions, please feel free to call.

Sincerely,

Michael D. Lyster

MDL:CS0:ss

Attachment

cc: NRC Project Manager  
NRC Resident Inspector Office  
NRC Region III

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Operating Companies  
Cleveland Electric Illuminating  
Company of Ohio

*Adol*  
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The following information represents the Cleveland Electric Illuminating Company (CEI) response to the specific Requested Actions in Generic Letter 92-04 for the Perry Nuclear Power Plant (PNPP) Unit 1.

Requested Action 1

1. In light of potential errors resulting from the effects of non-condensable gas, each licensee should determine:
  - a. The impact of potential level indication errors on automatic safety system response during all licensing basis transients and accidents;
  - b. The impact of potential level indication errors on operator's short and long term actions during and after all licensing basis accidents and transients;
  - c. The impact of potential level indication errors on operator actions prescribed in emergency operating procedures or other affected procedures not covered in (b).

Licensee's Response

- 1.a. The Boiling Water Reactor Owners' Group (BWROG) provided to the NRC and each of the member utilities a report titled "BWR Reactor Vessel Water Level Instrumentation," Revision 1, dated August 28, 1992. This report addresses the safety impact of potential water level indication errors on automatic system response during all licensing basis transients and accidents. This analysis basis is contained in Section 6.0, Safety Analysis, of the report and is summarized in Section 2.2, Plant Responses to Postulated Accident Scenarios. The information contained in the BWROG report is applicable to the design of PNPP, Unit 1. This conclusion is based on our review of the report and the evaluation made by General Electric as contained in Attachment 2 of the report. CEI recognizes that there are differences between the designs of BWR plants and systems. However, our review of the GE report and the conclusions contained in Attachment 2 of that report reinforce CEI's understanding that the basic plant response to the design basis transients and accident events are sufficiently similar to obviate the need for additional plant unique detailed re-analysis; and that the response of PNPP's automatic safety systems during all licensing basis transients and accidents will be within the predicted response contained within PNPP's USAR. CEI further believes, due to our compliance with GE's criteria for cold reference leg design and information contained within the BWROG Report, that water level errors induced by non-condensable gases coming out of solution during de-pressurization events will not be significant.
- 1.b. The BWROG report addresses in Section 6.9, Operator Responses, the operator actions that could be anticipated in response to potential water level indication errors. In the short term, the report discusses in Section 6.0, that the automatic safety actions will perform as necessary. Additional guidance has been provided to plant operations

personnel as a result of the Emergency Procedures Committee (EPC) recommendation letter of August 19, 1992. This guidance was provided to the licensed operators in shift turnover instructions and standing instructions, which noted that level errors may occur during depressurization events. The interim guidance has sensitized the operators to the possible concerns with the accuracy of water level readings during rapid depressurization events while not necessitating a change to the existing long term guidance provided in the Plant Emergency Instructions (PEIs).

- 1.c. As stated in Section 6.9 of the BWROG Report and the 1.b. response above, the licensed operators have adequate information in the present PEIs and in the EPC letter guidance. In addition, CEI is following the activities of the EPC, and will incorporate any additional recommendations appropriate for PNPP. The EPC is continuing to review the potential need for any additional guidance in the Emergency Procedure Guidelines (EPG) to further address the potential water level indication errors. Such review will take into account the information from the BWROG program of analysis and testing regarding this issue. This subject is more fully addressed in the BWROG response (BWROG-92082 dated September 24, 1992) to the September 9, 1992 letter from W. T. Russell to G. J. Beck.

#### Requested Action 2

2. Based upon the results of (1), above, each licensee should notify the NRC of short term actions taken, such as:
  - a. Periodic monitoring of level instrumentation system leakage; and,
  - b. Implementation of procedures and operator training to assure that potential level errors will not result in improper operator actions.

#### Licensee's Response

- 2.a. PNPP reactor water level indications are monitored once per shift and documented on the Control Room Reactor Operator Logs. The logs are arranged to facilitate short-term trends and can be compared on a weekly basis to determine longer term trends. In this manner, any indications of mismatches in reactor water level instrumentation channels are noted and trended. This process of reviewing control room reactor operator logs for mismatches in reactor water level instrumentation channels is considered appropriate for identifying the existence of reference leg leakage at PNPP.
- 2.b. As discussed above in items 1b and 1c, PNPP's licensed operators have been made aware of the potential for reactor level errors due to non-condensable gases coming out of solution during depressurization events and of appropriate operator response. This information was provided to PNPP's licensed operators and documented in daily shift turnover instructions and standing instructions. By these methods, the

EPC information, including proper operator responses, was discussed. In addition, formal classroom training on the theory of the subject water level phenomenon will be provided to PNPP's licensed operators in the short term.

### Requested Action 3

3. Each licensee should provide its plans and schedule for corrective actions, including any proposed hardware modifications necessary to ensure the level instrumentation system design is of high functional reliability for long term operation. Since this instrumentation plays an important role in plant safety and is required for both normal and accident conditions, the staff recommends that each utility implement its longer term actions to assure a level instrumentation system of high functional reliability at the first opportunity but prior to starting up after the next refueling outage commencing 3 months after the date of this letter.

### Licensee's Response

3. CEI endorses the BWROG plans originally provided in BWROG letter to the NRC on August 12, 1992, (BWROG-92072, G. J. Beck to W. T. Russell). CEI also reaffirms support of the comprehensive BWROG action plan discussed in the BWROG letter of September 24, 1992, (BWROG-92082, G. J. Beck to W. T. Russell). Therefore, based on the need to examine the results of the ongoing BWROG Program that is determining the impacts of various system geometries, CEI is not currently designing any hardware modifications to the PNPP reactor vessel water level instrumentation system design. If the results of the BWROG Program indicate that modifications are necessary to assure that the vessel level instrumentation system design is of high functional reliability, appropriate modification and implementation schedules will be developed and submitted to the NRC at that time. In the meantime, the existing information about the configuration of PNPP's cold leg water level instrumentation has been reviewed and provided to the BWROG to be factored into the test configurations in the BWROG program (provided to the NRC in the August 12, 1992 letter from the BWROG). Additional verification of piping slope and clearances, and condenser pot elevations will take place during the next refueling outage, currently scheduled to start in the fall of 1993.