



Entergy Operations

Entergy Operations, Inc.

317 Baronne St.
New Orleans, LA 70112
Tel 504-595-2805
Tel 504-739-6774

Raymond F. Burski

Manager
Safety & Regulatory Affairs

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
NRC Inspection Report 90-16
Reply to Notice of Deviation

Gentlemen:

In accordance with 10 CFR 2.201, Entergy Operations, Inc. hereby submits in Attachment 1 the responses to the Notice of Deviation identified in Appendix A of the subject Inspection Report. This Inspection Report identified deviations in the 1983 submittal letter for Regulatory Guide 1.97 Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following An Accident."

If you have any questions concerning these responses, please contact L.W. Laughlin at (504) 739-6726.

Very truly yours,

RFB/BGM/cmb
Attachment

cc: Messrs. R.D. Martin, NRC Region IV
D.L. Wigginton, NRC-NRR
E.L. Blake
W.M. Stevenson
R.B. McGehee

NRC Resident Inspectors Office

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ATTACHMENT 1

ENERGY OPERATIONS, INC. RESPONSE TO THE NOTICE OF DEVIATION IDENTIFIED IN
APPENDIX B OF INSPECTION REPORT 90-16

DEVIATION NO. 90-16-01

Based on the results of an NRC inspection conducted on August 20-24, 1990, a deviation from your commitments to the provisions of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following An Accident," was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1990) (Enforcement Policy), the deviation is listed below:

By letter to the NRC dated July 6, 1983, the licensee committed to comply with the provisions of Regulatory Guide 1.97, Revision 2, and provided a listing of instrumentation that would be used to meet those provisions.

The following are examples of the licensee's deviation from those commitments:

- A. Regulatory Position 1.4 of Regulatory Guide 1.97, Revision 2 (RG 1.97) states, in part, that Types A, B, and C instruments designated as Category 1 or 2 should be specifically identified on the control panels so that the operators can easily discern that they are intended for use under accident conditions.

In deviation from the above, instrument displays on the control panels did not contain a specific common designation, nor was it apparent that consistent training was conducted to inform the operators of which instrumentation was intended for use under accident conditions.

- B. The licensee submittal, dated July 6, 1983, states that recording for two reactor coolant system (RCS) cold leg temperature instruments would be provided with a range of 0-600° F. Additionally, Regulatory Position 1.3.1a of RG 1.97 states, in part, that the instrumentation should be qualified in accordance with the methodology described in NUREG-0588 (10 CFR 50.49).

In deviation from the above, the resistance temperature detectors (RTDs) supplying a recorder for RCS cold leg temperatures with a range of 0-600° F were not qualified in accordance with 10 CFR 50.49.

- C. The licensee submittal, dated July 6, 1983, states that there would be four channels per steam generator level with a range from the bottom to top connection (wide range-equivalent to a range from tube sheet to separators).

In deviation from the above, only two channels of wide range steam generator level were installed on each steam generator.

- D. The licensee submittal, dated July 6, 1983, states that there would be four channels of neutron flux monitoring with a range of 1E-8 to 2E2 percent. Regulatory Position 1.3.1a of RG 1.97 states, in part, that the instrumentation should be qualified in accordance with the methodology described in NUREG-0588 (10 CFR 50.49).

In deviation from the above, only two channels of wide range neutron flux were qualified in accordance with 10 CFR 50.49 and the ranges were 2E-8 to 2E2 percent, vice 1E-8 to 2E2 percent.

- E. By letter dated August 27, 1986, the licensee committed to install Category I instrumentation for RCS pressure with a range of indication consistent with RG 1.97. By letter dated August 20, 1987, the NRC accepted the licensee's schedule to install RCS pressure indication with a range of 0-4000 psig during the third refueling outage. Regulatory Position 1.3.1f of RG 1.97 states, in part, that continuous indication should be provided.

In deviation from the above, no continuous indication of RCS pressure was provided with a range of 0-4000 psig.

- F. The licensee submittal, dated July 6, 1983, states that the wide range containment sump water level would have a range of 0-20 feet.

In deviation from the above, the indicated range of the installed wide range containment sump water level is 0-16 feet.

Introduction

On July 6, 1983 LP&L submitted to the NRC, via letter number W3I83-0177, a list of the instruments which would be used for post accident monitoring in accordance with NUREG-0737, Supplement 1, Requirements for Emergency Response Capability. This submittal was based on an evaluation by our Architect Engineer (AE) of the guidance provided in Regulatory Guide 1.97 Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following An Accident." (NOTE: At this stage in the Waterford 3 construction process the AE was, for the most part, still tasked with modification/construction control.) In the submittal an attachment was provided listing in very general terms (i.e., unique instrument number designations were not identified) the instruments which would be designed for post accident monitoring.

By letter dated August 30, 1983 LP&L requested Ebasco Services (the Waterford 3 Architect Engineer) to conduct a review of RG 1.97 Revision 3 against RG 1.97 Revision 2 and the Waterford 3 commitments which were made in the July 6, 1983 LP&L submittal. The results of this review were documented by the AE in a letter to LP&L dated October 11, 1983. During the Waterford 3 review of this letter it was determined that there were inconsistencies in the July 6, 1983 LP&L submittal. Engineering and Nuclear Safety (ENS, the Waterford 3 engineering organization at that time) Action Item No. 290 dated April 22, 1987 identified the need to submit updated RG 1.97 information to the NRC, to revise the FSAR and to request from the AE a clarification of the inconsistencies identified in their October 11, 1983 letter. By letter dated August 17, 1987 Waterford 3 requested the AE to provide clarification for the following inconsistencies: a) neutron flux instrumentation, b) RCS cold leg temperature recorders, c) containment sump level, and a few additional items. The AE provided this information by letter dated June 30, 1988.

The actions discussed above resulted in the identification of the need to initiate a RG 1.97 upgrade as a part of the Design Engineering Transition Plan dated March 22, 1989. (NOTE: At this time the engineering department was in the process of reorganizing. As part of this a transition plan, or strategic plan, was initiated.) Additional action was undertaken to determine the scope of the deficiencies in the original submittal. This action, completed March 30, 1990, identified several inconsistencies among the July 6, 1983 submittal, the June 30, 1988 AE letter and Table 7.5-1 of the Waterford 3 FSAR. In June 1990, Nuclear Operations Engineering and Construction Organization issued Task Authorization TA I90-013, to evaluate the above inconsistencies. As part of this effort a contract was let with a consulting firm with expertise in the area of RG 1.97 to assist engineering in this effort. It is expected that TA I90-013 will be completed by December 1990.

As can be seen from the preceding discussion, Waterford 3 has been addressing the RG 1.97 issue in an attempt to ensure compliance with the requirements and to ensure that the Waterford 3 submittal reflects the actual commitments made by Waterford 3. This process was complicated by LP&L's reliance on the AE for

the bases of the original RG 1.97 submittal. As the proceeding discussions indicate, as questions were raised, LP&L engineering had to enlist the support of the AE for resolution. This lengthened the evaluation process and eventually resulted in essentially three lists of RG 1.97 instrumentation. However, as indicated in the most recent engineering evaluation (completed in March 1990), although several deficiencies were identified, Waterford 3 is in compliance with RG 1.97. The subject NRC inspection tends to confirm this since the deviations in this Inspection Report were previously identified by Waterford 3.

The root cause of these deficiencies was poor licensee control of the initial RG 1.97 process. This resulted in a failure on the part of LP&L engineering to establish a bases for this submittal necessitating AE input whenever deficiencies arose. This dependence on the AE prevented timely resolution of these deficiencies.

Although each deviation cited in the Inspection Report will be addressed individually, Waterford will correct these and other deficiencies/deviations as follows:

1. Evaluate and resolve deficiencies that were found among the lists (ECD December 1990),
2. Revise the FSAR by inserting a new table to accurately reflect and uniquely identify RG 1.97 instrumentation (ECD December 1991),
3. Revise procedure NOECP-309, Design Input, to specifically identify RG 1.97 as being a design document which should be reviewed when preparing a Design Change (ECD December 1990),
4. Provide new RG 1.97 submittal letter to accurately reflect our installed configuration and commitment to RG 1.97 (ECD February 28, 1991),
5. Implement DC 3283, Control Room and LCF Human Factors Enhancement, to review and upgrade the labelling on the control panels (ECD December 31, 1991), and
6. Enhance Operator training to identify RG 1.97 instruments (ECD June 1, 1992).

Response A

(1) Reason For the Deviation

The root cause of this deviation is as discussed in the introduction.

As a result of discrepancies noted in the 1983 submittal letter, the existing program for designating RG 1.97 instruments on the control panels was not followed through to completion.

(2) Corrective Steps That Have Been Taken and the Results Achieved

The Post Accident Monitoring Equipment Labelling Program (Orange Dot Program), identified in the Human Factors Manual #457002335, is the present method of identifying RG 1.97 instruments on the control panels.

In March 1990, Station Modification Request (SMR) MIS-027 identified the need to review and upgrade the labelling to support the Post Accident Monitoring Equipment labelling on the control panel instruments. Design Change (DC) 3283 has been assigned to implement SMR MIS-027.

(3) Corrective Steps Which Will Be Taken to Avoid Further Deviations

The Post Accident Monitoring Equipment Labelling Program will be updated and maintained. The maintenance of this program will be ensured by having one accurate RG 1.97 list which uniquely identifies the instruments and any additional plant changes will be required to have a review of RG 1.97 conducted in accordance with NOECP-309. DC-3283 will be implemented by December 31, 1991 and will verify and update the instrument labeling on the control panels.

The Training Department will revise appropriate lesson plans and train operators to identify RG 1.97 instruments. This training is expected to be completed by June 1, 1992.

(4) Date When Full Compliance Will Be Achieved

The date for full compliance with the requirements of RG 1.97 will be June 1, 1992.

Response B

(1) Reason For The Deviation

The root cause of this deviation is discussed in the introduction.

(2) Corrective Steps That Have Been Taken and the Results Achieved

The original 1983 submittal was in error. Waterford 3 has four qualified Reactor Coolant System cold leg temperature instruments with a range of 50 to 750°F, (RC-IT0112CA2&CB2 and RC-IT0122CA2&CB2). These instruments meet the Regulatory Guide 1.97 requirements for a qualified instrument with the required range.

(3) Corrective Steps Which Will Be Taken to Avoid Further Deviations

The need for recording Reactor Coolant System cold leg temperatures and our capabilities to provide and/or obtain the recordings will be evaluated further. An updated RG 1.97 submittal will include the results of this evaluation. Waterford 3 expects to submit the updated RG 1.97 information by February 28, 1991.

(4) Date When Full Compliance Will Be Achieved

Should additional recorders be necessary, the date for full compliance will be achieved by June 1, 1992.

Response C

(1) Reason For the Deviation

The root cause of this deviation is discussed in the introduction.

The four channels indicated in the 1983 submittal were based upon the four narrow range instruments which do not meet the Regulatory Guide 1.97 range requirements. The two wide range level channels per steam generator (SG-ILT1115A&B and SG-ILT1125A&B) meet the RG 1.97 requirements.

(2) Corrective Steps That Have Been Taken and the Results Achieved

No corrective actions required.

(3) Corrective Steps Which Will Be Taken to Avoid Further Deviations

The new submittal letter for RG 1.97 (expected to be submitted by February 28, 1991) will reflect this correct configuration.

(4) Date When Full Compliance Will Be Achieved

Full compliance for this deviation will be achieved when Waterford 3 submits a revision to the RG 1.97 submittal presently scheduled for February 28, 1991.

Response D

(1) Reason For the Deviation

The root cause of this deviation is discussed in the introduction.

The original 1983 submittal letter was in error regarding the neutron flux instrumentation. The "C" and "D" channels of neutron flux are qualified and provide the Regulatory Guide 1.97 indication requirements.

(2) Corrective Steps That Have Been Taken and the Results Achieved

The evaluation which is currently being performed by TA I90-013 determined that the neutron flux instrumentation that is presently in place meets the requirements of RG 1.97.

(3) Corrective Steps Which Will Be Taken to Avoid Further Deviations

The new submittal letter for RG 1.97 (expected to be submitted by February 28, 1991) will reflect the correct configuration. Additionally, the neutron flux range will be revised in the new submittal from (1E-8% to 2E2% power) to (2E-8% to 2E2% power). This range meets the requirements of RG 1.97.

(4) Date When Full Compliance Will Be Achieved

Full compliance for this deviation will be achieved when Waterford 3 submits a revision to the RG 1.97 submittal presently scheduled for February 28, 1991.

Response E

Reason For the Deviation

Entergy Operations does not agree with this deviation.

The definition of "continuous indication" has been interpreted by Entergy Operations differently than described within the inspection report. The Qualified Safety Parameters Display System (QSPDS) continuously displays on demand the two channels of 0-4000 psig RCS pressure, and in addition, retains in a 30 minute rolling buffer, the highest pressure value measured. The term "continuously displayed on demand" means that the QSPDS system will continuously update the display containing RCS pressure once the screen displaying the points has been demanded. The screen will continuously update without operator interaction. This does not mean that the operator must periodically select an instantaneous pressure reading to continuously update the display. FSAR section 1.9A states that the QSPDS meets the requirements

of Regulatory Guide 1.97 and NUREG 0737.II.F.2. This was also indicated in the 1983 submittal letter. No exception by the NRC was noted for the QSPDS.

Response F

(1) Reason For the Deviation

The root cause of this deviation is discussed in the introduction.

The installed range of the containment sump water level is 0-16 feet. This range is acceptable based on the Loss of Coolant Accident (LOCA) flood level calculations (EC-M89-004 Rev. 0).

(2) Corrective Steps That Have Been Taken and the Results Achieved

The evaluation which is currently being performed by TA I90-013 determined that the containment sump level instrumentation that is presently in place meets the requirements of RG 1.97.

(3) Corrective Steps Which Will Be Taken to Avoid Further Deviations

The new submittal letter, which is expected to be completed February 28, 1991, will be revised to reflect the installed instrumentation (SI-ILT7145A&B).

(4) Date When Full Compliance Will Be Achieved

Full compliance for this deviation will be achieved when Waterford 3 submits a revision to the RG 1.97 submittal presently scheduled for February 28, 1991.