U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-254/92002(DRS); No. 50-265/92002(DRS)

Docket Nos. 50-254; 50-265 Licenses No. DPR-29; No. DPR-30

Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

Facility Name: Quad Cities Nuclear Power Station - Units 1 and 2

Inspection At: Cordova, IL 61241

Inspection Conducted: February 3 - 13, 1992

Inspectors: Peggy R. Rescheske, RIII — Date: 03/05/92
Lead Inspector

Ronald A. Langstaff, RIII — Date: 3/6/92

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Approved By: Monte P. Phillips, Chief — Date: 3/9/92
Operational Programs Section

Inspection Summary

Inspection on February 3 - 13, 1992
(Reports No. 50-254/92002(DRS); No. 50-265/92002(DRS))
Areas Inspected: Routine, safety inspection focusing on the Quad Cities Emergency Operating Procedures (EOPs); implementation of Revision 4 to the BWR Owners Group Emergency Procedure Guidelines (BWROG EPGs) completed in May 1991; the programs for controlling and maintaining the EOPs; and actions to resolve previous weaknesses in the EOP program and transition to flowchart format EOPs, which were identified in the NRC EOP Team Inspection Reports No. 50-254/88-200; No. 50-265/88-200. The inspection was conducted under NRC Inspection Procedure 42001.

Results: In the area of EOPs, no violations of NRC requirements were identified, three previously identified items (IFIs) were closed, and one open item was identified. Two previously identified violations and one unresolved item were also closed in the area of plant design changes.

The EOP program and implementation generally was adequate, satisfied regulatory requirements, and was consistent with the guidance and recommendations in NUREGs 0899, 1358, and other NRC accepted documents. Significant improvements have been made in several areas since the NRC EOP Team Inspection was conducted in 1988. Management involvement in and support of the EOP program was also evident. In general, the EOPs were technically correct and could be accomplished using existing equipment, controls, and instrumentation. The Writer's Guide for the EOP flowcharts appeared adequate, and the EOPs were consistent with this guidance. The licensee's programs for verification and validation (V&V) of the EOP flowcharts and the EOP text format support procedures were adequate to assure that the quality of the EOPs would be maintained. Implementation of these programs completed in May 1991 for the upgrade to the Revision 4 EPGs was also acceptable. No training related concerns were identified. Quality Assurance (QA) involvement in the area of EOPs was adequate.

Several minor program weaknesses and procedure deficiencies were noted. One open item was identified to track the licensee's completion, approval, and control of the EOP development document (documentation of PSTG/EOP differences).

REPORT DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

B. Strub, Assistant Superintendent, Operations
D. Boyles, EOP Coordinator
J. Burkhead, Nuclear Quality Programs
L. Hamilton, Regulatory Assurance
D. Kanakares, Regulatory Assurance
M. Kooi, Operating Engineer
R. Stols, Station Program Supervisor

U.S. Nuclear Regulatory Commission (NRC)

T. Taylor, Senior Resident Inspector, Quad Cities

The above individuals attended the exit meeting held on February 13, 1992.

Other persons were contacted during the inspection including members of the licensee's operations, training, and quality assurance staffs.

2. Licensee Action on Previously Identified Items

a. Issues identified during the Special NRR EOP Team Inspection conducted in 1988 were reviewed during a followup inspection conducted by NRR in 1989 (Inspection Reports No. 50-254/90006(DRP); No. 50-265/90006(DRP)). The following items identified during this NRR followup inspection have been adequately addressed by the licensee and are considered closed.

(1) (Closed) IFI-001: The licensee failed to develop and implement an adequate verification and validation program for the EOPs. As discussed in Paragraph 4.c of this inspection report, the current V&V program and implementation was acceptable.

(2) (Closed) IFI-002: The licensee provided inadequate management oversight of the EOP developmental program. As discussed throughout this inspection report, management involvement and support was evident. The licensee's quality assurance organizations were also involved in EOP assessments.

(3) (Closed) IFI-003: It was not apparent that the licensee had performed a comprehensive review of the specific EOP Team inspection findings. The licensee has completed this detailed review and taken appropriate actions.

b. Licensee actions to several EOP-related issues identified by NRC Examiners during the 1991 Operator License Requalification Examinations were reviewed. The following items were adequately addressed by the licensee and resolved by the February 5, 1992 EOP revision.

(1) The radiation levels in QGA Detail D12 were revised to be more consistent with the Main Steam Line Rad Monitors by using 1.00E3 and 1.50E3 instead of 10XN and 15XN. The radiation level 15XN in the Power leg of QGA 101 was also revised.

(2) Data sheets have been created for use when executing QGA 300 to record values from the backpanels. QCAP 200-10 was revised to include these sheets as attachments.

c. The following items were identified during an inspection conducted in 1989 which focused on plant design changes. The licensee has adequately addressed and resolved the issues, and satisfied the commitments made in response to the concerns. Additional information was transmitted to the NRC, and the appropriate procedures and programs have been revised. Licensee actions have been reviewed by the NRC and these items are considered closed.

(1) (Closed) Unresolved Item (254; 265/89025-01(DRS)): Additional information was needed to determine if the licensee's program and procedures were adequate in the area of 10 CFR 50.59 reviews for changes involving Technical Specifications.

(2) (Closed) Violation (254; 265/89025-02(DRS)): The licensee failed to submit the required information or the submittal was not filed at the required frequency for Revision 5 and 6 updates to the Quad Cities UFSAR [violation of 10 CFR 50.71(e)(4) and (e)(2)(ii), and 10 CFR 50.59(b)(2)].

(3) (Closed) Violation (254; 265/89025-03(DRS)): The licensee failed to assure that Revisions 5 and 6 to the UFSAR contained the latest material developed, analysis of new safety issues, or lists of current pages after page replacement [violation of 10 CFR 50.71(e) and (e)(1)].

3. Inspection Overview

The inspection focused on the Quad Cities Emergency Operating Procedures (EOPs); implementation of Revision 4 to the BWR Owners Group Emergency Procedure Guidelines (BWROG EPGs) completed in May 1991; and the programs for controlling and maintaining the EOPs. In addition, the inspectors reviewed the licensee's actions to resolve previous weaknesses in their EOP program and the transition to flowchart format EOPs which were identified in the NRC EOP Team Inspection Reports No. 50-254/88-200; No. 50-265/88-200.

The inspection consisted of a limited technical and human factors review of selected EOPs, including control room and in-plant walkthroughs; a cursory review of the Writer's Guide for the EOP flowcharts and its implementation; a review of the Verification and Validation (V&V) programs and implementation; and an assessment of Quality Assurance (QA) involvement in the area of EOPs. A listing of procedures and other documents utilized during the inspection is in Appendix A of this inspection report.

The results of the inspection indicated that the EOP program and implementation was adequate, satisfied regulatory requirements, and was consistent with the guidance and recommendations in NUREGs 0899, 1358, and other NRC accepted documents. Some minor program weaknesses and procedure deficiencies were noted. A discussion of the areas assessed and the results follow, with additional details in Appendix B of this inspection report.

Significant improvements had been made in several areas since the 1988 EOP inspection, especially in the V&V program and implementation. EOP-related deficiencies identified at other CECo plants had been addressed by the licensee. Management involvement in and support of the EOP program had increased, as was evident by management's support for EOP-related modifications. The modification prioritization procedure had been revised to ensure EOP-related modifications received additional weighting. Several modifications were planned by the licensee which would further enhance the usability of EOPs and plant reliability. For example, one of the modifications, scheduled for the 1992 Unit 2 outage, will install banana plug connections to

eliminate the need for spade type jumpers to perform several of the EOPs.

4. EOP Desktop Review and Walkthroughs

The desktop review included comparisons of the Quad Cities Plant Specific Technical Guidelines (PSTG) to Revision 4 of the BWROG EPGs, and a review of the documentation used to justify deviations from the EPGs. The calculational basis for selected plant specific parameters and curves used in the EOPs was also reviewed. Portions of selected EOPs were reviewed using the EPGs, PSTG, and the Writer's Guide as a basis. Technical adequacy of selected EOPs was evaluated using plant system and logic drawings. Walkthroughs of a sample of EOPs were conducted by the inspectors, accompanied by licensed or non-licensed operators who would normally perform the procedures. The V&V program and implementation was also reviewed. The inspectors concluded that the EOPs were, in general, technically correct and could be accomplished using existing equipment, controls, and instrumentation. Some minor procedure deficiencies and program weaknesses were identified, as follows.

a. Calculations

Though the results of the calculations appeared technically adequate, the following examples were identified where the basis for the input data was not always appropriate:

(1) Plant Computation WS-9, Primary Containment Limit, was used to develop a QGA 200 limit curve found in Detail QGA-D2, Primary Containment Pressure Limit. One input parameter, "dPsrv, Differential pneumatic pressure (minimum) required to open SRVs (psid)", was noted to have a value of 25 psid. The value was based upon an undated, but documented, telephone conversation between the licensee and a Target Rock Co. representative. The source of the number was not identified. The licensee should assure that data used as input for EOP computations are traceable to quality records.

(2) The inputs and assumptions for the calculations to generate Detail QGA-D5, ECCS Vortex Limit, were reviewed. The input value for the RHR pump runout flow was taken from general vendor information rather than the plant specific curves developed from flow tests for the pumps used. The licensee should assure that the best available information is used as input for EOP computations.

b. PSTG/Flowchart Consistency

The inspectors noted numerous differences between the PSTG and the EOP flowcharts which were not documented and were not identified during the licensee's V&V of the EOPs. These differences involved changes in sequence, changes in logic, and relocation of steps to other EOPs. Several examples are given in Appendix B of this inspection report. Generally, these changes in EOP structure appeared to enhance the useability of the flowcharts; however, these differences were not reflected in the EPG/PSTG Comparison Document. Because of the uncontrolled nature of these changes, the potential existed for inadvertently altering the operational strategy intended by the PSTG. From a procedure maintenance and revision standpoint, the differences between the PSTG and flowcharts should be documented and justified. The licensee had recognized the need for this documentation, and had initiated an effort to document all differences between the PSTG and EOPs. The inspectors reviewed the draft "Development Document" for the three EOP flowcharts which had nearly completed documentation, and found the level of detail was acceptable. Licensee completion, approval, and control of the development document will be tracked as an Open Item (254/92002-01(DRS)).

c. Verification and Validation (V&V)

The licensee's programs for verification and validation of the EOP flowcharts and the EOP text format support procedures were considered adequate to assure that the quality of the EOPs would be maintained. The inspectors reviewed a sample of V&V documentation completed for the upgrade to the Revision 4 EPGs, and determined that the implementation of the V&V programs was also acceptable.

While strong operations participation was evident in implementation of the V&V program, more attention to detail and additional human factors involvement could have precluded a number of deficiencies in the EOP support procedures, such as, inconsistencies in component labeling and instrument markings. For example, the control room instrumentation for the RCIC and HPCI turbines had markings placed at 2000 rpm, whereas the minimum allowable value was 2200 rpm. An example of inconsistent labeling was the solenoid operated CAM system valve that was identified as an air operated valve in procedure QCOP 2400-1 as well as labeled as such in the control room. In this case, the plant drawing correctly identified the valve as

solenoid operated. Additional examples are given in Appendix B of this report.

5. Training and Qualification

The inspectors held discussions with licensee representatives regarding operator training requirements for EOP revisions and philosophy of use of the EOPs (e.g., entry and exit), and reviewed related lesson plans and procedural requirements. The inspectors also assessed training during the EOP walkthroughs in the plant and control room conducted with operations staff. No concerns were identified with respect to training or the effectiveness of training.

6. Quality Verification

Quality Assurance (QA) involvement in the area of EOPs was considered adequate. The licensee was also addressing corporate commitments made in response to previous concerns at the Dresden Plant. Annual GSEP audits routinely include review of selected elements of the EOP program and implementation. Other more comprehensive audits are also periodically conducted, such as those performed in 1988 and 1990. The corporate performance assessment organization has also recently become involved in assessments of EOPs.

7. Open Items

Open items are matters which have been discussed with the licensee which will be reviewed further by the inspector and which involve some action on the part of the NRC or licensee or both. One open item was identified during this inspection and is described in Paragraph 4.b.

8. Exit Meeting

The inspectors met with licensee representatives (denoted in Paragraph 1) on February 13, 1992. The inspectors summarized the purpose, scope, and findings of the inspection and the likely informational content of the inspection report. The licensee acknowledged this information and did not identify any information as proprietary.

Appendix A

Procedures and Other Documents Utilized During the Inspection

Quad Cities Emergency Operating Procedures (Most Revisions Dated May 17, 1991 or Later)

Flowcharts (QGAs, Quad Cities General Abnormal Procedures)

QGA 100	Reactor Pressure Vessel Control, Revision 1
QGA 101	RPV Control (ATWS), Revision 1
QGA 200	Primary Containment Control, Revision 1
QGA 200-5	Hydrogen Control, Revision 2
QGA 300	Secondary Containment Control, Revision 1
QGA 400	Radioactivity Release Control, Revision 1
QGA 500-1	RPV Blowdown, Revision 6
QGA 500-2	Steam Cooling, Revision 5
QGA 500-3	Drywell Flooding, Revision 4
QGA 500-4	RPV Flooding, Revision 5

Text Format EOPs (QCOPs, Quad Cities Operating Procedures)

QCOP 201-10	Bypassing Isolation Signals to Allow Drywell Flooding or Alternate RPV Blowdown, Revision 1
QCOP 203-1	Reactor Pressure Control Using Manual Valve Actuation, Revision 0
QCOP 250-1	Pressurizing the Main Steam Lines, Revision 0
QCOP 250-2	Bypassing MSIV Low Low Reactor Water Level Group I Isolation Signal, Revision 0
QCOP 250-5	Reactor Pressure Control Using the Main Steam Line Drains, Revision 0
QCOP 250-6	Venting Reactor Pressure Vessel Via Main Steam Line Drains, Revision 0
QCOP 300-16	Addition of Water to Reactor Vessel Using CRD Hydraulic System, Revision 0
QCOP 300-19	CRD Pump Cross-Tie Operation, Revision 0
QCOP 300-28	Alternate Control Rod Insertion, Revision 1
QCOP 1000-5	Shutdown Cooling Start-up and Operation, Revision 0
QCOP 1000-8	Post-Accident Containment Spray Initiation, Revision 1
QCOP 1000-9	Torus Cooling Start-up and Operation, Revision 1
QCOP 1000-18	Torus Water Transfer to the Floor Drain Collector Tank, Revision 0
QCOP 1000-21	LPCI Mode of RHR Manual Initiation, Revision 1
QCOP 1100-2	Injection of Standby Liquid Control, Revision 1
QCOP 1100-8	Reactor Level Addition with SBLC Test Tank Injection, Revision 0

QCOP 1200-2	Bypassing All RWCU Isolation Signals, Revision 0
QCOP 1200-7	RWCU System Coolant Rejection, Revision 0
QCOP 1200-10	Injection of Boron Using the Reactor Water Clean-up System, Revision 0
QCOP 1200-11	RWCU System Start-Up, Revision 0
QCOP 1300-2	RCIC System Manual Start-up (Injection/Pressure Control), Revision 2
QCOP 1300-3	Filling Torus From CCST Through RCIC Minimum Flow Line, Revision 1
QCOP 1300-10	Bypassing RCIC Low Pressure Isolation, Revision 0
QCOP 1300-11	Venting Reactor Pressure Vessel Via RCIC Steam Line Drains, Revision 0
QCOP 1400-2	Core Spray System Manual Initiation, Revision 0
QCOP 1400-6	Injecting Water into the RPV Using the ECCS Keep Fill Pump, Revision 1
QCOP 1600-1	Drywell Pressure Relief Through SBGT, Revision 0
QCOP 1600-2	Torus Pressure Relief Through SBGT, Revision 0
QCOP 1600-3	Drywell Pressure Relief Through Reactor Building Ventilation System, Revision 0
QCOP 1600-4	Torus Pressure Relief Through Reactor Building Ventilation System, Revision 0
QCOP 1600-13	Post Accident Venting of the Primary Containment, Revision 1
QCOP 1600-17	Bypassing Group II Isolation and Reactor Building Ventilation Isolation, Revision 0
QCOP 1600-18	Calculating Primary Containment Water Level, Revision 1
QCOP 1600-25	Post LOCA Drywell Purge With Nitrogen for Hydrogen Control, Revision 0
QCOP 1600-26	Post LOCA Drywell Purge With Air For Hydrogen Control, Revision 0
QCOP 2300-2	Filling Torus From CCST Through HPCI Minimum Flow Line, Revision 0
QCOP 2300-6	HPCI System Manual Start-up (Injection/Pressure Control), Revision 1
QCOP 2300-9	Bypassing HPCI and RCIC High Torus Level Automatic Suction Transfer, Revision 0
QCOP 2300-10	Reactor Vessel Injection Via HPCI Cooling Water Pump, Revision 0
QCOP 2300-11	Venting Reactor Pressure Vessel Via HPCI Steam Line Drains, Revision 0
QCOP 2400-1	CAM Subsystem Operation, Revision 0
QCOP 2400-2	CAM Subsystem Preparation for Standby Operation, Revision 0

QCOP 2900-2	Safe Shutdown Makeup Pump System Start-up, Revision 0
QCOP 3200-9	Emergency Reactor Vessel Level Control Using Condensate/Feedwater or Standby Coolant Supply, Revision 0
QCOP 3200-10	Bypassing Reactor Feed Pump High Reactor Level Trip, Revision 1
QCOP 3300-12	Injection into the Reactor using the Condensate System Crosstie, Revision 0
QCOP 4100-10	Emergency Reactor Vessel Level Control Using Diesel Fire Pumps Via Safe Shutdown Makeup System, Revision 1
QCOP 4100-11	Emergency Reactor Vessel Level Control Using Diesel Fire Pumps Via ILRT Spoolpiece Connection, Revision 0

Supporting EOP Programs, Procedures, and Other Documentation

QAP 1100-13, "Control of Emergency Operating Procedures," Revision 4 (for EOP flowcharts only)

QAP 1100-S12, "Plant Specific Technical Guide," Revision 4.2 (Quad Cities PSTG)

QAP 1100-S13, "Plant Specific Writers Guide," Revision 4.0 (OEI Document 8907-3Q)

QAP 1100-S14, "Emergency Procedure Guide / Plant Specific Technical Guide Comparison Document," Revision 4.1 (Quad Cities PSTG, Appendix A)

QGA Development Document (DRAFT), documenting translation to flowchart EOPs from text format PSTG

Quad Cities Nuclear Power Station PSTG Input Data, Revision 0 (OEI Document 8907-1Q)

QCAP 200-10, "Emergency Operating Procedure (QGA) Execution Standards," Revision 0

QCAP 1100-4, "Procedure Revision, Review, and Approval," Revision 2 (used for EOP support procedures)

QCAP 1100-6, "Procedure Validation," Revision 0 (used for EOP support procedures)

QCGP 2-3, "Reactor Scram," Revision 0

Appendix B

Detailed Comments on the EOPs

QGA 100 Reactor Pressure Vessel Control

- The "FAILURE TO SCRAM" step was added to the override in the Pressure leg and was not documented as a deviation from the PSTG. The licensee stated that this deviation will be documented in the QGA development document which was being created.

QGA 101 RPV Control (ATWS)

- The second wait symbol in the Pressure leg used the terminology " . . . Shutdown Cooling pressure interlock . . .", which was inconsistent with the annunciator identification "SHUTDOWN COOLING PRESS PERM."

- The second execution block in the Power leg stated "Actuate ARI", which was inconsistent with the control panel labeling "ATWS MANUAL SCRAM."

QGA 200 Primary Containment Control

- Primary Containment Pressure and Drywell Temperature legs - Terminology used in action statements was not always permissible as prescribed by the Writer's Guide. For example, "Keep trying to lower . . .", "Lower", and "Keep trying to . . .", were used in the flowchart but were not allowed by the Writer's Guide.

- Undocumented differences were noted between the PSTG and the flowchart which included the following examples of "round-offs": (1) Drywell Temperature leg stated temperature was 280 deg F, whereas the PSTG was 281 deg F; and (2) Primary Containment Pressure was 6 psig whereas the PSTG was 6.32 psig.

- The Primary Containment Pressure leg action block included the step, "1. SCRAM". Previous plant conditions would have caused a scram. Under certain conditions, such as an ATWS when attempting to drain the hydraulic control units, the re-insertion of a scram would adversely affect the intended action by re-pressurizing the units. The added step deviated from the EPG and the PSTG, and was not documented and justified.

QCOP 201-10 Bypassing Isolation Signals to Allow Drywell Flooding or Alternate RPV Blowdown

- The numerous panels in the Auxiliary Electric Room were adequately labeled, however the operator experienced delays in locating several of the panels required by the procedure, because the distinctive EOP-related markings were not used on the exterior of the panels. The licensee agreed to consider marking the affected panels with the EOP-related markings permitted by QCAP 200-10.

QCOP 300-19 CRD Pump Cross-Tie Operation

- The following labeling discrepancies were identified: (1) Procedure Step G.3.a(17)(h), page 10, "DPI 1-302-93A/B, CRD PMP SUCT FILT" gauge was not labeled in the plant; (2) Step G.3.a(17)(i), page 10, "DPI 1-302-52, U-2 CRD DRIVE WATER DIFF PRESS" gauge was labeled "DPIS 1-302-52" in the plant; and (3) Step G.5.a(15)(i), page 18, DPI 1- and 2-302-52, U 1/2 CRD DRIVE WATER DIFF PRESS gauge did not have an identifying label.

- Step G.5.a(15)(h), page 18, stated "Verify the following CRD System parameters: DPI 1-302-93A/B, CRD PMP SUCT FILT, indicates less than 17 psid located at CRD pump level." This section was using Unit 2, 2A CRD Pump, but checks the suction differential pressure with the equivalent Unit 1 gauge. As written, the procedure will not accomplish the intended function. The licensee stated that this deficiency had recently been discovered and that a procedure revision was being processed.

QCOP 300-28 Alternate Control Rod Insertion

- A key was required from the communications center for accessing scram toggle switches located on Panel 901-16. The requirement for a key was not mentioned in the procedure. The licensee planned to review the use of keys required for EOP actions, and to consider placing keys in the individual procedure/equipment packages in the EOP cabinet located in the control room.

- A fuse puller was required for both a control room portion and an in-plant portion of the procedure. The requirement for a fuse puller was not mentioned in procedure. Fuse pullers were available both in the control room and the auxiliary electric room in the plant. However, the operator was not able to locate the fuse puller in the plant. The licensee resolved this concern by placing a fuse puller in the EOP cabinet in the control room.

- Drawing M-41, Diagram of Control Rod Drive Hydraulic Piping, Sheet 1, Revision AR, had two valves numbered 1-0301-138A. The licensee was in the process of revising the drawing based on their plant walkdowns. The licensee had identified this error and the draft revised drawing had the correct valve numbers.

QCOP 1000-8 Post-Accident Containment Spray Initiation

- Step G.1.c(3) stated, "IF Reactor level is less than 2/3 Core height, THEN . . . ". The operator would probably determine the parameter from the reactor vessel wide range level Yarway; however, the instrument was not annotated with "2/3 Core height" nor was the adjacent operator aid that correlated several other of the instrument's parameters annotated with the "2/3 Core height". Thus the operator had to refer to a desk copy of several other operator aids (graphs, drawings, etc.) to correlate the instrument reading with 2/3 Core height (-191"). The activity took time, and required interpretation of a graph that was difficult to read. The licensee agreed to consider changes which would permit implementation of the EOP step without conversion and interpretation.

QCOP 1300-2 RCIC System Manual Start-up (Injection/Pressure Control)

- The tick mark on control room turbine speed indication was placed at 2000 rpm which was contrary to the procedure which specified a 2200 rpm minimum allowable turbine speed.

QCOP 1400-6 Injecting Water Into the RPV Using the ECCS Keep Fill Pump

- Performance of this procedure required an "R" key to gain access to the torus basement which was a high radiation area. The requirement for an "R" key was not mentioned as a prerequisite for this procedure.

- The licensee should consider alternatives for accomplishing the intent of this procedure, since access to the torus basement during a LOCA may not be possible.

- Valves 1-1001-186, 1-1301-81, and 1-2301-107, located in the 1B core spray room, were required to be used by this procedure. However, none of the valve labels had a yellow QGA sticker indicating that the valves were for EOP use.

QCOP 1600-3 Drywell Pressure Relief Through Reactor Building Ventilation System

- QGA 200, Primary Containment Control, stated "Hold drywell and torus pressures below 2.5 psig using QCOP 1600-3". Step G.1.f of QCOP 1600-3 required monitoring drywell pressure using the CONTAINMENT PRESS gauge PI 1(2)-8740-11. The pressure gauge had a red tick mark at the control value of 2.0 psig, an old Technical Specification number that had no current applicability. The instrument should be corrected to have the tick mark relocated to the current control (scram) value of 2.5 psig.

- Step G.2 required monitoring Drywell/Torus differential pressure for a value greater than 1.2 psid. The operators used instrument DP 1-8740-1 to monitor the parameter. The control room instrument did not have units of "PSID", and the decimal point in the digital readout was not lit (thus the instrument read 129 versus 1.29). A work request had not been initiated for correcting the deficiency, and the instrument did not have an off-normal indication (ONI) sticker. During the inspection, the licensee placed an ONI sticker on the instrument.

QCOP 1600-13 Post Accident Venting of the Primary Containment

- Step 4.a(1) required that the "VENT ISOL SIG BYP" key be obtained from the Communication Center (outside the control room) to permit (initiate) containment venting. The licensee agreed to consider relocating the bypass key to the control room.

QCOP 1600-17 Bypassing Group II Isolation and Reactor Building Ventilation Isolation

- The Reactor Building Ventilation Isolation Dampers nomenclature was inconsistent as follows: Print M-373, Sheet 1, QC Station U-2, Diag of Rx Bldg Ventilation,

identified the damper as "AO 2-5741A"; Procedure QCOP 1600-17 identified as "1(2)-5741-1A"; and the Control Room label was "1A RX BLDG INLT DAMPER 1A-5741"

QCOP 1600-25 Post LOCA Drywell Purge With Nitrogen for Hydrogen Control

- Step G.4.b, 1(2)-8799-26, Make-up N2 Supply to Drywell/Torus PCV Downstream Stop, noun-name nomenclature in the procedure was different from the nomenclature on the valve label.

- Step G.18 required opening 1/2-8799-51, Common Crosstie Between Makeup & Purge Headers. The valve was labeled with a (old) metal tag that was inconsistent with all other valve tags, and was difficult to read in the poor lighting conditions in the diesel generator room.

- Step G.20.b required monitoring of TI 1/2-6641-8038 to control N2 flow. The temperature indicator was not labeled.

- Step G.7 required operation of valves located on top of the Unit 1(2) torus. During normal operation, the area is restricted entry as a high radiation area. Access to the area would not be possible during a LOCA with fuel failures. The licensee agreed to consider alternative methods for accomplishing the intent of the procedure (such as performing a modification to relocate the valves).

- The Prerequisites did not mention that a high radiation area entry key was to be obtained before attempting to execute the procedure. The key was required at Step G.7 for entry to top of torus.

QCOP 1600-26 Post LOCA Drywell Purge With Air For Hydrogen Control

- The procedure listed valve 1-8799-50 as "N2 MAKE-UP UPSTREAM ISOL FROM BULK STORAGE" which was inconsistent with the plant labeling "N2 MU SV."

- The procedure listed valve 1-8799-21 as "MAKE-UP N2 SUPPLY TO DRYWELL/TORUS PCV BYPASS VALVE" which was inconsistent with the plant labeling "N2 MU FROM PCV BYP VLV."

- The procedure listed valve 1-8799-18 as "N2 MAKE-UP SUPPLY TO DW PNEU SYSTEM" which was inconsistent with the plant labeling "N2 MU ▒▒▒▒ PNEU SYS SU." (A portion of the valve label was obscured by paint.) Also, the yellow QGA sticker on the valve label was peeling off.

- The procedure listed valve 1-4799-489 as "N2 MU/INST AIR TO DW PNEU PI-2-4741-13 SHUTOFF VLV" which was inconsistent with the plant labeling "N2 MU/INST AIR TO PI-2-4741-13 SHUTOFF VLV." No valve number was listed on the valve label in the plant.

QCOP 2300-6 HPCI System Manual Start-up (Injection/Pressure Control)

- The green band for the control room turbine speed indication was 2000 through 4000 rpm which was contrary to the procedure which specified a 2200 rpm minimum allowable turbine speed.

QCOP 2400-1 CAM Subsystem Operation

- The Containment Atmosphere Monitoring system nomenclature was inconsistent as follows: Print M-641, Sheet 1, Diag of Containment Atmosphere Monitor System Unit 1(2) identified a valve as "SO 1(2)-2499-1A" (or B); Procedure QCOP 2400-1 identified the valve as "AO 1(2)-2499-1A"; and the Control Room CAM Panel 901-55, 56 was labeled "AO 1(2)-2499-1A" (or B). (Similar problem with 2499-2, 3, and 4A or B). This inconsistency was particularly important in that potential confusion in the type of operator (Air Operator versus Solenoid Operator, AO/SO) could become very distracting in a degraded power condition if the valves failed to stroke during operation of the system. The licensee determined that the valve was actually a solenoid operated valve as in the print.

QCOP 2900-2 Safe Shutdown Makeup Pump System Start-up

- Flow indicator for FCV 1/2-2901-6, SAFE SHUTDOWN MU PMP FCV, was not color banded to reflect safe (or unsafe) operating ranges for the make-up pump. The safe band is 200 to 400 gpm, and was properly reflected as a Caution in the procedure, however, the indicator should also be marked.

QCOP 3300-12 Injection Into the Reactor Using the Condensate System Crosstie

- Valve controller FIC 1-640-19A was labeled "FW MAN/AUTO CONST STA" in the procedure which was inconsistent with the control room panel labeling "FEEDWATER MAN/AUTO CONT STA."

QCOP 4100-11 Emergency Reactor Vessel Level Control Using Diesel Fire Pumps Via ILRT Spoolpiece Connection

- Although this procedure required installation of a spoolpiece, no guidance was provided on how to install the spoolpiece and what equipment and materials were required. The licensee was in the process of developing a standard maintenance work request to perform this task which would include this information and resolve this concern.

- Although the operators stated that they could not perform this procedure from memory and needed the procedure in hand, this procedure was not an "ON HAND" procedure. The licensee agreed that the procedure should have been an "ON HAND" procedure and agreed to make it an "ON HAND" procedure at the next revision.