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January 28, 1991

Mr. Roy P. Zimmerman, Director
Division of Reactor Safety and Projects
U. S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5360

Dear Mr. Zimmerman:

Subject: Docket No. 50-206
Emergency Operating Instruction Program
San Onofre Nuclear Generating Station, Unit 1

Your letter dated November 8, 1990, forwarded NRC Inspection Report (IR) No. 90-11 which documents a special team inspection of Unit 1 Emergency Operating Instructions (EOIs) conducted at San Onofre by Mr. G. Johnston and other members of the NRC staff.

The inspection report identified deficiencies in our EOIs and requested that SCE provide a corrective action plan to address these deficiencies. The attachment provides our Unit 1 EOI program corrective action plan to correct the identified deficiencies. As discussed with Mr. D. F. Kirsch of your staff on December 3, 1990, due to the number of deficiencies identified, additional time was required to prepare a complete response.

In addition, you requested SCE assess why our verification and validation (V&V) program did not identify these deficiencies. We have concluded that the V&V program needs to be improved. The deficiencies were due to a lack of specific procedural guidance for assessing the EOIs for human factors considerations, and due to personnel (procedure authors) failure to adequately implement existing Writer's Guide requirements. Examples of these human factors are sequencing and structuring EOI procedural steps for ease of use, consistent use of equipment names, controlling the inventory of in-plant tool lockers, and providing easy access to in-plant equipment controls required to be manipulated by the EOIs.

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To improve our V&V program, we are revising our V&V procedure SO1-14-46 to include specific requirements for consideration of whether human factors have been incorporated into procedures. Also, we are revising our Writer's Guide procedure and retraining the procedure authors to emphasize the importance of strict adherence to Writer's Guide requirements.

Following the cycle 11 refueling outage, we will revise SO1-14-46 to upgrade the Writer's Guide and V&V program based on the results of the EOI evaluation and the NRC EOI inspection. In addition, this revision will further improve the V&V program based on the lessons learned by the V&V of revised EOIs currently in progress. We will verify that all EOIs are consistent with the post cycle 11 revision of the Writer's Guide, and we will conduct V&V of the next set of EOI revisions under the post cycle 11 V&V program. These activities will be completed during the fourth quarter of 1991. Additional corrective actions are discussed in the Attachment.

If you require any additional information, please call me.

Sincerely,



Attachment

cc: J. B. Martin, Regional Administrator, NRC Region V)
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre

ATTACHMENT

CORRECTIVE ACTION PLAN FOR DEFICIENCIES IDENTIFIED DURING NRC INSPECTION OF SAN ONOFRE UNIT 1 EMERGENCY OPERATING INSTRUCTION (EOI) PROGRAM

NRC Inspection Report 50-206/90-11 and Attachment A to Report 50-206/90-11 identified specific deficiencies with EOI procedures. The following provides the corrective actions for these identified deficiencies.

I. SPECIFIC CORRECTIVE ACTIONS FOR INSPECTION REPORT OBSERVATIONS

Procedure Reviews

EOIs will be revised to include harsh environment criteria within brackets alongside the normal procedural acceptance criteria. This activity will be completed by the fourth quarter of 1991.

Control Room and Plant Walkdowns

The following issues, identified in the control room and plant walkdowns, are being addressed to enhance the EOI Program.

1) Control Room Nomenclature

The human factors related nomenclature observations will be resolved with our Control Room Design Review (CRDR) project which is separately scheduled for Cycle 12.

2) EOI Attachments

Procedure attachments will be selectively included in the EOIs for use by operators performing extensive or time consuming actions outside of the control room. The attachments will be compatible with the operators' expected routes to minimize task time and potential radiological exposure. The attachments are expected to be incorporated into applicable EOIs by the next EOI revision presently scheduled for completion during the fourth quarter 1991.

3) Identification Tags on Manual Valves

Identification tags located on manual valves outside the control room will be improved for easy reading in low-light conditions by the end of the fourth quarter of 1991. The valve tags will be uniquely colored to indicate a valve is associated with an EOI. Other valve identification methods, such as color coding valve handwheels to match the tags, are being evaluated.

4) Plant Equipment Local Actions

The local operation of Component Cooling Water System valves CV-737A and B was opined to be time-consuming since it required removing a sheet-metal cover to gain access to and operate a vent valve in the CV-737A and B actuators prior to repositioning of the valves. The IR proposed the addition of an access port for the vent valves. An access port will be added to improve operator access to the valve by the end of cycle 12.

5) Tool Locker Inventory System

Although all the appropriate tools were available in the tool lockers, no inventory or surveillance system was in place to ensure tools were available when needed. Therefore, a tool locker inventory and tool surveillance system will be implemented by the fourth quarter of 1991. The system will include minimum requirements to ensure adequate tools are available for operators to perform the actions required by the EOIs.

Verification and Validation

Following the cycle 11 refueling outage, we will revise the V&V program controls in SO1-14-46, "Emergency Operating Instruction Preparation" to implement the following V&V program enhancements:

1) V&V Program

Revisions to EOIs will undergo a V&V according to guidelines that will be specified in the upcoming revision SO1-14-46.

The Unit 1 Plant Superintendent will have additional procedural guidance for selecting individuals to participate in the V&V process to ensure that EOI reviews are performed by sufficiently experienced individuals. Additional procedural guidance will also be added addressing the EOI custodian's responsibility for establishing a multidisciplinary team.

Procedural guidance will be added addressing the Senior Operations supervisors' responsibility for coordinating the review, collection, and resolution of comments with the EOI author.

Procedural guidance will be added for providing copies of the proposed EOI revision, current EOIs, Westinghouse Owners Group Emergency Response Guidelines, and Background Documents to all persons conducting technical reviews.

The standard QA program review of EOIs is performed in addition to V&V activities and is not a substitute for V&V. The upcoming revision of SO1-14-46 will provide guidance for the Unit 1 Superintendent to select those individuals who may participate in this review to ensure, when possible, that reviewers independent of the EOI V&V process participate in the review.

2) V&V Criteria

Specific evaluation criteria for control room and in-plant walkthrough reviews will be provided in separate check lists in the upcoming revision to SO1-14-46. The criteria for the Writer's Guide adherence review and the technical review will also be separated.

Human Factors Review of EOIs (Writer's Guide)

SO1-14-46 will be revised to make the following specific enhancements to the Writer's Guide following the cycle 11 outage:

1) EOI Format, Content, and Structure

The use and structure of references to external procedures will be enhanced by referring to specific external procedure sections, as appropriate. In cases where transitions are made within the same EOI or to another EC, the review of applicable notes or cautions preceding the step transitioned to will be addressed in the step from which the transition is taking place.

An "approved" verb list versus a "preferred" verb list will be established. The current list will be reviewed and overlapping or ambiguous verbs deleted. The terms "ensure", "verify" and "check" are being given extensive review during the present V&V, with the intent to more completely define these terms.

Logic terms are being evaluated for both consistency and appropriateness. The term AND/OR will continue to

be used and the term OR will be defined to mean the exclusive OR only. Cases where OR is used to mean the inclusive will be rewritten to read AND/OR.

The rationale for use of abbreviated sentences or full and complete sentences will be more fully explained in the Writer's Guide for both the ACTION/EXPECTED RESPONSE column and RESPONSE NOT OBTAINED column.

2) Placekeeping Aids

Neither the Unit 1 EOIs nor the Westinghouse Emergency Response Guidelines use check-offs. Use of check-offs has the potential to cause confusion when many steps need to be re-performed. However, use of check-offs will continue to be assessed through our participation as a member of the Westinghouse Owner's Group.

3) Component Identification

We plan to eliminate the EOI and control room equipment labeling inconsistencies and the control room instrumentation layout concerns through: 1) the Control Room Design Review (CRDR) process, 2) proper adherence to human factors principles including the use of more detailed procedural guidance, and 3) implementation of IE group recommendations.

II. SPECIFIC CORRECTIVE ACTIONS FOR EOI INSPECTION REPORT ATTACHMENT A OBSERVATIONS

Attachment A to the IR documented 115 observations which resulted from the review and plant walkdown of selected EOIs. As discussed with Mr. G. Johnston (NRC:RV), they are being presented in general categories and discussed below. A list correlating all 115 observations to the different categories is available for review if desired.

<u>Number of Observations</u>	<u>Category</u>
10	Technical Problems
9	Other issues already tracked for resolution by Design Controls
15	Human Factors Involving EOI, Control Room, and Plant Equipment Nomenclature
47	Human Factors Involving EOI Step Format, Structure, and Content
34	Observations Not Considered to be Problems
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Total	115

The 10 observations concerning technical problems will be resolved prior to the return to service from the cycle 11 outage.

The other 9 issues were identified and tracked as a result of the Design Change Process and will be resolved prior to return to service from the cycle 11 outage.

The 15 human factors related nomenclature observations will be resolved with our Control Room Design Review (CRDR) enhancements project scheduled for cycle 12.

Resolution of the 47 human factors observations related to EOI Step content will be completed during the fourth quarter 1991, when our next revision of EOIs is scheduled to be completed.

Finally, we identified 34 observations that do not require corrective action. We will create a file for your review during a subsequent inspection. This will be completed during the fourth quarter of 1991.

As an example of observations where no corrective action is required, refer to the first item in Attachment A. The observation states that Step 1.c of procedure S01-1.0-10 is not consistent with the similar Step 4.a in S01-1.0-11. Step 1.c reads: "verify rod bottom indicator lights - ON". Step 4.a includes the qualifier "all lights - ON."

The steps in the two procedures have different objectives. Procedure S01-1.0-10, step 1.c requires the operator to make a quick observation of rod bottom lights to see if a reactor trip has been initiated. No additional action is required if two or more rod bottom lights are not ON. With Reactor Trip Breakers open and neutron flux decreasing as expected following a reactor trip, the reactor can be considered functionally shutdown.

In Procedure S01-1.0-11, step 4.a, the operator verifies all rod bottom lights are ON to see if there are any stuck rods. In this step, the determination of adequate shutdown margin is necessary and additional action is required to be taken if two or more rod bottom lights are not ON.