



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PDR

June 5, 1984

Docket No. 50-454

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Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Vice President
P. O. Box 767
Chicago, Illinois 60690

TIME REQUESTED

Gentlemen:

SUBJECT: BYRON INTEGRATED DESIGN INSPECTION - REPORT NO. 50-454/83-32

R. DeYoung's letter of September 30, 1983 transmitting the subject inspection report requested that Commonwealth Edison evaluate the necessity for conducting audits of design implementation in areas other than those audited by the Integrated Design Inspection to assure that deficiencies of similar importance either do not exist or are corrected. My May 2, 1984 letter noted that Commonwealth had taken action to have Bechtel conduct a review of Sargent and Lundy covering three systems at the Byron Station, and it was our understanding that you would submit to us the plans for conducting this review. We indicated that this IDI report item would be an open item pending our review of this plan.

On May 24, 1984, Commonwealth Edison provided for our review a document titled "Program Plan Independent Design Review of Byron Generation Station, Units 1 and 2", Rev. 0, dated April 1984 and approved (by Bechtel) May 4, 1984 (Enclosure 1 to this letter). We have reviewed the program plan, and our comments are covered in Enclosure 2 to this letter. Two of the comments involve your providing us with checklists and a detailed schedule associated with the design review, which we understand will be provided the week of June 4, 1984. We intend to use these in planning for our surveillance of the Bechtel review. The remaining items should be factored into the program plan for the Bechtel design review. Subject to this action, we consider this a satisfactory method for resolving the IDI item.

Sincerely,

J. Nelson Grace, Director
Division of Quality Assurance, Safeguards,
and Inspection Programs
Office of Inspection and Enforcement

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Enclosures:

1. Bechtel Program Plan
2. Comments on Program Plan

cc w/enclosures:
See next page

June 5, 1984

cc w/enclosures:

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ENCLOSURE NO. 2

COMMENTS ON PROGRAM PLAN FOR INDEPENDENT DESIGN REVIEW

OF BYRON

1. Page 8 states that no attempt will be made to re-verify each step in designing the specified systems, and instead "... the designs will be reviewed for accurate inputs and reasonableness of outputs, and adequacy of the design techniques ...". The review should also include adequacy of assumptions.
2. Page 8 states that independent calculations will be performed only to the extent necessary, and not as a general rule. The program plan or implementing procedures should establish criteria for determining when independent calculations will be performed.
3. Page 8 states that judgments on accuracy and completeness of design documents will consider the level of detail needed to link design requirements with the output documents, and the process employed. Page 8 also states that such judgments will consider the need to justify design decisions and assumptions. These judgments should also consider the ability of calculations to be easily reconstructed, as required by S&L procedure 3.08.
4. Page 9 states that each system will be reviewed from the standpoint of an integrated design, properly coordinated between disciplines, and will include mechanical, electrical, nuclear, and civil/structural aspects of the design. No reference is made to instrumentation and control. Page 19, Figure 1 indicates that reviews of the component cooling water and essential service water systems do not involve electrical and instrumentation and control personnel. However, page 5 notes that reviews will cover instrumentation and control and electrical aspects of design. The staff assumes that reviews of all three systems will include electrical power and instrumentation and control areas. Figure 1 and page 9 should be revised accordingly.
5. Page 9 states that the last design revision will be considered the basis of the review. This may be a field change request or other change notice. Also in-process work will be included, where appropriate. In order to make the review representative of S&L work in general, Bechtel should impose a cutoff date, e.g., the date it was announced that the three specific systems would be reviewed. Observations should be based on status of the design prior to that date. It has been our experience with Integrated Design Inspections that, without a cut-off date, design organizations tend to "fine-tune" the design for the systems to be inspected.

6. Page 10 states that in the event there are activities for which procedures were not followed, the actual practices used will be evaluated. The Bechtel report should identify where procedures were not followed and the actual practices used in such cases.
7. Page 10 states that due consideration will be given to the extent to which engineering judgment is appropriate, in lieu of written procedures, and that recognition will be made of the complexity of the work, how unique it is, qualifications of personnel performing it, and other relevant factors. The details of engineering judgments should be documented to be consistent with S&L's procedure 3.08 with respect to allowing easy reconstruction of calculations.
8. Please provide us with the checklists for Tasks 1-3.
9. The Bechtel review should cover fire protection.
10. Page 21 states that detailed schedules will be developed after initial reviews have taken place. Please provide us with a schedule which indicates the level of manpower and mix of disciplines at each work location (e.g., Chicago or San Francisco) week-by-week.
11. Page 8 states that Task 2 will review each of the selected systems for adequacy in meeting the licensing commitments and safety related design requirements. As part of Task 2, an assessment should be made with respect to whether calculations exist wherever required (e.g., to support design parameters indicated in the FSAR) and whether calculations have been updated to reflect the latest design configuration.
12. Page 5 indicates that the review will cover mechanical, structural, and plant arrangement aspects of the design of each system. Bechtel should assure that the review addresses interactions between Category I and non-Category I structures, systems, and plant equipment, e.g., as indicated in Standard Review Plans 3.7.2 and 3.7.3.