Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

March 14, 1991

Mr. A. Bert Davis
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Station Units 1 and 2
Reply to Unresolved Item
Inspection Report Nos. 50-454/90025 & 50-455/90025
NRC Docket Nos. 50-454 and 50-455

Reference: a) February 15, 1991 letter from M.P. Phillips to Cordell Reed transmitting the results of a Routine Safety Inspection at Byron Station

Dear Mr. Davis:

The referenced letter transmitted Inspection Report 50-454/90025; 50-455/90025. An unresolved item was identified concerning the selection of ANSI code requirements for performing post-modification testing. A written response was requested and is contained in the Attachment to this letter.

If you have any questions regarding this response, please direct them to this office.

Very truly yours,

P.L. Barnes for

T.J. Kovach
Nuclear Licensing Manager

Attachment

cc: NRC Resident Inspector - Byron
NRC Document Control Desk
G.M. Nejfelt - RIII

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COMMONWEALTH EDISON RESPONSE
UNRESOLVED ITEM
50-455/90025-01

During a review of modification M6-2-89-652 for replacement of the hydrogen gas totalizer the NRC inspectors found that:

a) Dual editions of the ANSI Standard Code for Pressure Piping (ANSI B31.1 - 1973 and ANSI B31.1 - 1977) were allowed to be arbitrarily chosen by Sargent & Lundy per Procedure 303.2 for testing Class D piping (procedure file no. "F-2739, L-2739, Amd. 10, 10-31-86).

   At the time of the exit, the facility was in the effort of obtaining the rationale for allowing dual editions of a code to be the effort of obtaining the rationale for allowing dual editions of a code to be concurrently applicable (e.g., basis of Sargent & Lundy Procedure 303.2 changed by Amendment No. 7).

b) The pneumatic test pressure to verify the integrity of the Unit-2 Hydrogen Totalizer from the site hydrogen storage tank was performed at 125 psig. Using ANSI B31.1 - 1977, the test pressure of 125 psig was correct; however, no indication was made in the modification package that this pressure was held for a minimum of 10 minutes. Using ANSI B31.1 - 1973, the minimum test pressure required would have been 150 psig.

Given this, the inspectors posed two questions:

Question 1: How are post modification test criteria verified to be correct?

Response: "Introduction" to both the 1973 and the 1977 Editions states in part that, "... After Code revisions are approved by ANSI they may be used by agreement between contracting parties ...". Commonwealth Edison and S&L agreed, for reasons listed below, to adopt the 1977 Edition of ANSI B31.1 for Examination, Inspection and Testing. The initiating document for this action was S&L Engineering Change Notice (ECN) 7809, dated May 14, 1984. This ECN was subsequently incorporated into F/L-2739 Amendment 10, dated October 31, 1986. Both ECNs and specifications are reviewed and approved for use by Commonwealth Edison in accordance with Quality Assurance Procedures QP 3-1 and QP 3-2.

Commonwealth Edison chose to adopt the 1977 Edition of ANSI B31.1 for Examination, Inspection and Testing, due to relaxation of requirements for Initial Service Leak Test. The 1973 Edition requires that this test be performed at design pressure, whereas the 1977 Edition requires the test be performed at normal operating pressure. The benefit of performing the initial service leak test at normal operating pressure is that the system can be brought up to test pressure much more quickly and with less labor involved. Commonwealth Edison decided to leave the option for an installer to perform the test at design pressure (1973 Edition) should the installer decide that an "added confidence" would be provided by testing at the higher pressure. Initial Service Leak Tests to either the 1973 or 1977 Code Edition is acceptable to Commonwealth Edison's Nuclear Engineering Department.

Plant design changes are controlled under two main programs, Modifications and Minor Changes. The current modification program provides a detailed list of potential testing requirements which are selected by either Nuclear Engineering or the Station Technical Staff and reviewed by the applicable Technical Staff Group Leader and Assistant Technical Staff Supervisor. In addition, modification tests are written and approved by the Station On-Site Review function. Minor changes are controlled under a separate system similar to Byron's program for maintenance work. Testing of minor changes is specified by the Technical Staff System Engineer and approved by the Station On-Site Review function as part of the installation authorization. Minor Change testing may be documented within the Nuclear Work Request (NWR) program without specific written instruction.

To further clarify:

BAP 1610-8, section E.5.c.2 requires the completion of the testing equipment checklist (BAP 1610-BT2). This requires identification of three phases of testing for the modification (construction testing, modification testing and equipment operability testing). Acceptance criteria for the modification test is identified in part b of the checklist.

BAP 1600-7 (Minor Changes Which do not Change Function) and BAP 1610-8 read as follows:

"Development of test requirements, acceptance criteria and procedures shall be based on design test requirements to include but not limited to applicable codes and standards and applicable Nuclear Engineering Department (NED), designer test requirements".

Question 2: What is the justification for accepting the Unit 2 Hydrogen Totalizer pneumatic test that is described as acceptable?

Response: Due to maintenance on the hydrogen system, numerous mechanical connections were also being tested in addition to the totalizer. Given the system configuration, greater than 10 minutes would have elapsed between pressurization at 125 psig and inspection. ANSI B31.1-1977 does not require detailed documentation similar to ASME Section III. Although no specific documentation exists stating that the system was maintained at pressure for 10 minutes, CECo believes the test was performed satisfactorily and is considered acceptable.