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release

IMUF:GHB
70-36

Combustion Engineering, Inc.
ATTN: Mr. A.E.Scherer
Director, Nuclear Licensing
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Windsor, Connecticut 06095-0500

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Gentlemen:

Per our discussion, enclosed is a draft agenda for our meeting in
Hematite on April 14, 1988.

Original Signed By:

George H. Bidinger
Uranium Fuel Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Enclosure:
As stated

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LICENSE AMENDMENT APPLICATION DATED DECEMBER 28, 1987
RE URANIUM ENRICHED TO 5 W/O U-235

Part I

1. Table 4.2.4 should include SIU criteria for slabs of uranium enriched to 5 w/o U-235. The criteria should be based on optimum moderation of the unit.
2. Section 4 should include moderation control criteria which is used in the demonstrations of nuclear criticality safety in Part II. In addition, justification of the criteria should be provided in Part II.
3. Section 6 should be expanded to include the limiting conditions of operations for the UF₆ conversion process. This section should include operability requirements prior to and during a conversion run and the automatic and manual actions to be taken in event of the loss of instruments and controls to ensure nuclear criticality safety during a process operation.

Part II

1. Sections 8 and 9 need to be revised to base all safety analyses on 5 percent U-235 enrichment. Subsections 8.1.1, 9.5, and 9.6, for example, are based on lower enrichments.
etc.
2. Sections 8 and 9 need to be revised to assure that, for each process step, the basis for nuclear safety is clearly referenced to criteria in Section 4, Part I. Examples of this problem are:
 - a. the 30 kg storage cans - Section 8.1.6
 - b. the 25.7 liter blender - Section 8.2.1
 - c. 5-gallon pails - Section 8.2.2.
3. In Subsection 8.7, several of the safety evaluations (e.g., 8.7.3, 8.7.5., etc.) demonstrate that the process equipment are subcritical, but the units do not have the safety factors established in Subsections 4.2.3 or 4.2.4 of Part I. The subsection should be revised to assure that unit safety factors and unit spacing are consistent with Part I.
4. In Section 8.8, the dimensions of equipment should be given to show that Chapter 4, Part I, criteria are satisfied.
5. In Section 9, assumptions of conditions with less than optimum moderation, full reflection, heterogeneity, etc., lead to reduced k-effective values in the safety analysis. These assumptions must be assured by appropriate limits and controls which are established as license condition in Part I.

6. In Section 9.3, the increase in k-effective for conversion equipment containing 5% U-235, rather than 4.1% U-235, has been ignored. The allowable solid angle had been exceeded even for conversion equipment containing 4.1% U-235. The loss of safety margins on both k-effective and solid angle must be evaluated.
7. In Section 9.6, the k-effective for the blenders has not been evaluated for 5% U-235.
8. In Section 9.7, the enrichment was increased from 4.1 to 5% U-235 without explanation, the k-effective for the reactor dropped from 0.96 to 0.95. Please explain this effect.