From: Lawrence Burkhart
To: Brian Sepelak
Date: 8/15/01 1:00PM
Subject: HOLTEC REPORT RAI

Brian,

Attached are some RAI questions regarding the subject report.

Mail Envelope Properties
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Subject: HOLTEC REPORT RAI
Creation Date: 8/15/01 1:00PM
From: Lawrence Burkhart

Created By: LJB@nrc.gov

Recipients
firstenergycorp.com
sepelakb (Brian Sepelak)

Post Office	Route
firstenergycorp.com	internet

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RAI1492 sent 081501.wpd	4476	08/15/01 12:13PM
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REQUEST FOR ADDITIONAL INFORMATION

REGARDING FIRSTENERYG NUCLEAR OPERATING COMPANY'S

LICENSE AMENDMENT REQUEST DATED MARCH 19, 2001

The following questions are in response to the Nuclear Regulatory Commission staff's review of the Holtec Report Entitled, "Evaluation of Spent Fuel Assembly Drop Accidents in the BVPS Reactor Core" attached to the March 19, 2001, letter.

(1) Material properties

In section 2.0 of the report, it is recognized that the material properties could deviate from the nominal value significantly when the deformation is applied in an impulsive manner or the material is irradiated for a long period of time. Both of these situations are present in the currently postulated drop events. However, there is no discussion that the effects of these two factors have been considered in arriving at the material properties used in the analysis. Please provide additional information regarding this issue.

(2) Structural Modeling

In section 6.2 of the report, each of the fuel rods and guide tubes is modeled by 18 beam elements. The weight of the fuel pallet in each fuel rod is represented by a mass element at the lower end of the fuel rod. The lateral inertia force on the fuel rod due to the weight of the pallet will be neglected if the mass of the fuel rod is modeled at the lower end. There is no discussion why this modeling is bounding for determining the integrity of the fuel rod. Please provide this information.

(3) Results of fuel drop event Cases 1 and 2

In case 1, the fuel rods assembly drops from a height of 30' on a rigid floor and it results in a rupture of 74 fuel rods (about 28% of the total fuel rods). In case 2, the fuel rod assembly drops from a height of 16.7' (almost half the height of case 1) on another fuel rod assembly (much more flexible than the rigid floor in case 1) and results in the rupture of about 69 fuel rods in each of the fuel rods assembly (26% of the total fuel rods, almost the same percentage as in case 1). Considering the differences in the rigidity of the impacting surface (rigid floor or fuel rod assembly), and the difference in the fuel rod assembly drop height, the results do not appear consistent. Please provide the basis for and explanation of the difference in the resultant number of ruptured fuel rods in case1 and 2.