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FAX MESSAGE

TO: Joe Shea

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I call your attention to the December 28, 1994 event at Georgia Power Company's Edwin I. Hatch Nuclear Plant Unit 1 as reported under 10 CFR 50.72. Apparently, a used core shroud head bolt measuring 15' by 3" diameter and weighing 350 pounds was being lifted out of the spent fuel pool for shipment offsite when the steel cable sling failed with the bolt approximately one foot above the fuel pool surface. The bolt fell to the bottom of the spent fuel pool without hitting racks or spent fuel. The bolt tore a three inch diameter gash in the stainless steel liner of the spent fuel pool and allowed 2000 gallons of fuel pool water to drain, lowering the fuel pool level by 2". The leak was slowed to ≈0.7 gpm by the operators closing drain valves from the concrete liner. Level was restored using a non-safety related makeup source. The licensee was expected to repair the stainless steel liner using underwater welding.

This event is noteworthy for several reasons, including:

1) The weight of this bolt is less than the weight of a BWR fuel assembly and is also less than the load cell setting on the refueling bridge hoist and crane. Objects weighing as much as, and more, than this bolt are frequently handled above the spent fuel pool.

2) The classic 'drop' analysis performed involves postulating the dropping of a single fuel assembly onto a rack containing irradiated fuel. The damage is confined to the dropped assembly and those assemblies it impacts until it comes to rest. But what if it misses the racks and punctures the liner?

3) The second classic 'drop' analysis performed involves postulating the dropping of a heavy load (e.g. one controlled under NUREG-0612). The typical scenario is that of dropping a shipping cask onto the liner or fuel pool wall. This analysis is generally a handwaving exercise since the probability of dropping a cask is considered very remote. But what if you drop a lighter load, such as a bolt?

4) What if the gash torn in the liner had been larger? The leak rate would have been greater and the inventory loss before isolation greater. Few licensees, if any, have analyzed the radiological consequences from a loss of fuel pool water level. The hazard is not only from the irradiated fuel in the pools, but also from all the accumulated irradiated components (control blades, fuel channels, nuclear instrumentation, blade guides, channel fasteners, etc.) which frequently adorn the walls of spent fuel pools. A loss of level which uncovers these components could cause significant onsite exposure problems.

The dangers are real. These events are not merely theoretical. The NRC needs to take positive action to prevent a event with more serious consequences.

Attachment 1