



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

May 23, 2001

MEMORANDUM TO: J. E. Dyer, Regional Administrator

FROM: Ross B. Landsman, Project Engineer, DNMS

SUBJECT: DIFFERING PROFESSIONAL VIEW CONCERNING THE STARTUP  
OF THE DRY CASK STORAGE LOADING CAMPAIGN AT DRESDEN  
UNITS 2 & 3

It is ironic that in 1976, we allowed the licensee to use the unacceptable Unit 2/3 Reactor Building Crane for handling fuel casks. This was temporary and only while the Unit 2 Reactor was shut down. If we didn't, it would impact the licensee's schedule for fuel handling (see licensee's letter dated 5/20/1976). It should be noted that they have loaded greater than 68 fuel casks between 1975 and 1984 with Unit 2 on-line which was contrary to technical specifications after the amendment on June 3, 1976. The four loaded prior to the amendment were contrary to their original license.

We gave them a temporary waiver on the installation of three planned modifications; one of which appears was never installed, the inching motor. Another issue we gave them a temporary bye on was the strength of the main cable (wire rope). The factor of safety was not acceptable. We told them to tell us when they would replace the rope with the appropriate rope. Twenty-six years have passed with the same unacceptable rope. NUREG-0554, paragraph K-1, requires a 10 to 1 factor of safety considering both static and dynamic loads. The factor of safety on the rope, on the lead line is only 6.564 to 1 based only upon a static load. A dynamic load increase of approximately 10% would reduce the factor of safety to under 6.0. Additionally, a critical item of NUREG-0554 is the hook which also requires a factor of safety of 10 to 1; it's at 8.5 to 1.

The required load cell was jumpered out of service before 1981. Without the load cell, the crane may have been overloaded numerous time during the 20 years.

We gave them a bye on the correct seismic design of the crane and supporting Reactor Building Superstructure because it was "not practicable." It would have required a new bridge and extensive modifications to the supporting structure. They told us the existing crane and support structure would be evaluated for OBE loads with AISC allowables used, and SSE loads with a maximum of 0.9F<sub>y</sub> used for material strength. It should be noted they had to use greater than F<sub>y</sub> for the building material strength to get the interaction coefficients at or equal to 1.0. These calculations were performed without lifted load included to determine if any revisions to beams would be required. See Inspection Report 07200037/2001-001 to see how well the required mods were implemented.

Even then, all these issues were contrary to Branch Technical Position APCS 9-1 (the fore-runner of NUREG-0554 and NUREG-0012), and we still approved the crane (temporarily) and let them carry casks over safety related equipment unanalyzed. At least the reactor was supposed to be shut down.

B/1

Here we are, 25 years later, with the same unresolved issues, along with additional critical issues, letting them go again because of ...

In 1981, the crane was not load tested following extensive needed repairs of the girder as required by ANSI B-30.2. The licensee's calculations indicated that without the repairs, the main girders would be over stressed by 20%. Thus, necessitating repairs to restore it to Operability. Portions of the web plates were cut out and replaced along with the addition of cover plates over the bottom flanges. The licensee classified this as a minor repair and we are agreeing with them?

In 2001, in an attempt to restore the crane to Operability (because of years of neglect), a "major" (licensee's word) crane modification was performed which replaced all the crane controls including over 700 new electrical - terminations. Again, without the B-30.2 required load test and we are agreeing with them again?

On May 13, 1996, in their response to us from Bulletin 96-02, they re-affirmed their commitment to us not to carry heavy loads over safety related equipment while the reactor was at power because it's prohibited by Technical Specifications. They further stated that if such movements would be done in the future, they would demonstrate that they can safely shutdown the reactor as a result of a load drop inside the building. Later on in 1996, we allowed the licensee to remove all requirements and restrictions from the Technical Specifications concerning the Reactor Building Crane, and implement them through administrative procedures, which the amendment reviewer never saw (see Amendment dated June 28, 1996.) However, the requirement to not move heavy loads over safety-related equipment at power was conveniently never heard from again. When the inspector informed the licensee that they had a commitment (which did make it into the procedure), to demonstrate that they could shut down the reactor if there was a load drop, the licensee subsequently also deleted that commitment.

The licensee deleted the commitment "to demonstrate the capability of performing the actions necessary for safe shutdown in the presence of the radiological source term that may result from a breach of the dry fuel storage cask, damage to the fuel, and damage to safety-related equipment as a result of a load drop inside the facility." Their rationale was that the Reactor Building Crane is single-failure-proof and thus a load drop analysis is not required to be performed.

Even though HQ concluded that the deficiencies noted above exist, they do not create an imminent threat of adequate protection, and no NRC action to intervene is required; there still is the unanswered question of does the proposed activity increase the consequences of an accident. HQ conclusion was based upon the fact that we issued a paper 25 years ago that said it was single-failure-proof. They also indicated that since the crane has operated for many years without dropping a load, i.e., the rope or repaired girder haven't failed, nor has an earthquake occurred during prior fuel cask handling, it must be ok.

Prior commission approval is required if the proposed change, test or equipment involves a change to commitments incorporated in the license or an unreviewed safety question exists.

Both of these are in effect here. Commitments made to the NRC have been deleted and there is an unreviewed safety question in moving the cask over the torus and other safety-related equipment while the reactor is at power.

An unreviewed safety question exists (i) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the SAR may be increased; or (ii) if a possibility for an accident or malfunction of a different type than any evaluated previously in the SAR may be created; or (iii) if the margin of safety as defined in the basis for any technical specification is reduced.

The proposed cask movement activities represent an unreviewed safety question that should be submitted for NRC review and approval per 10 CFR 50.59 and 50.90. This is based on the movement of loads heavier than those previously analyzed in the FSAR. This is also based on the fact that the load drop had not been previously evaluated, and on the possibility that a drop in the reactor building while the reactor is at power could result in consequences that are greater than those previously postulated in the FSAR.

Therefore, although the licensee had reduced the probability of dropping the cask, a load drop could result in an increase in the potential consequences, accordingly, as defined in 50.59(c), if an activity is found to involve an unreviewed safety question, an application for a license amendment must be filed with the commission pursuant to 50.90.

In summary, allowing Dresden to use the reactor building crane with an unacceptable rope, an untested crane, a crane or building structure that wouldn't support the load in an earthquake, all while Unit 2 is at power, does not meet the intent of our regulations and should be stopped. Furthermore, we stopped Oyster Creek in 1996 from doing the same thing with an identical non-single-failure-proof crane. Why is this different?