PLANT SYSTEMS

SNUBBERS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.4 (Continued)

e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans for each type of snubber. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test period shall be implemented:

1. At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.4.f, an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or

2. A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7.4-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.4.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7.4-1. If at any time the point plotted falls in the "Reject" region all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested; or

3. An initial representative sample of 55 snubbers of each type shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, 1 + C/2, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation $N = 55(1 + C/2)$. Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls on or below the "Accept" line, testing of that type of snubber may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type have been tested.

Description of Proposed Change

The telescoping mast currently installed on the Refuel Platform main hoist (General Electric Model NF400) consists of three open frame type triangular sections. In order to reduce the possibility of grappling the wrong fuel bundle as a result of mast bowing and to reduce the potential for contamination of the operators due to water dripping from the open frame mast, the current NF400 mast will be replaced with a solid cylindrical telescoping mast (General Electric Model NF500). The only design change of safety significance is the additional weight of the NF500 mast. As a result of the additional weight, the main hoist overload cutoff setpoint and both of the main hoist loaded interlock setpoints specified in Technical Specification 3/4.9.6.1, Refueling Platform, must be revised. IP therefore proposes to change the main hoist overload cutoff setpoint specified in Surveillance Requirement 4.9.6.1.a from 1200 ± 50 pounds to 1600 ± 50 pounds and the main hoist loaded interlock setpoints specified in Surveillance Requirement 4.9.6.1.f from 485 ± 50 pounds and in Surveillance Requirement 4.9.6.1.h from 550 ± 50 pounds to 700 ± 50 pounds (for both).

Justification for Proposed Change

The fuel handling and refueling systems are designed to provide a safe and effective means for transporting and handling fuel. Safe handling of fuel includes design considerations for maintaining occupational radiation exposures as low as is reasonably achievable (ALARA).

As described in USAR Section 9.1.4.2.7.1, the refueling platform is a gantry crane which is used to transport fuel and reactor components to and from the containment storage pool and the reactor vessel. The platform spans the fuel storage and vessel pools on bedded tracks in the refueling floor. A telescoping mast and grapple (suspended from a trolley system) is used to lift and orient fuel bundles for core, storage rack, or inclined fuel transfer system upender placement. Control of the platform is from an operator station on the main trolley. A position indicating system and travel limit computer is provided to locate the grapple over the vessel core and prevent collisions with pool obstacles.

Two 1000-pound capacity auxiliary hoists, one mounted on the main trolley and one mounted on the auxiliary monorail trolley, are provided for incore servicing such as detector module replacement, fuel support replacement, jet pump servicing, and control rod blade replacement. The main fuel grapple, in its fully retracted position, provides 8 feet 6 inches minimum water shielding over the active fuel during transit. The fuel grapple hoist incorporates redundant lifting features (e.g., dual cables) so that no single component failure will result in a fuel bundle drop. Interlocks on the platform prevent unsafe operation over the vessel during control rod movements, prevent collision with the auxiliary platform, avoid unsafe operation in the transfer tube upender zone, limit travel of the fuel grapple, and interlock grapple hook engagement with hoist power.

The main hoist overload cutoff setpoint is selected to limit the lifting forces of the main hoist to ensure that excessive lifting forces are not applied to a fuel bundle should it become stuck during lifting operations. The limiting component of the fuel bundle is designed to withstand 3g of

forces, or approximately 2,000 pounds. As a result, the proposed main hoist overload cutoff setpoint of 1600 ± 50 pounds will continue to ensure that lifting forces of the main hoist will be limited to less than those forces considered in the design of the fuel bundles.

The main hoist loaded interlocks are provided to: 1) initiate a control rod block to prohibit control rod withdrawal when the main hoist is loaded and located over the reactor vessel, or conversely, prevent lifting a load when the platform is over the reactor vessel and a control rod is withdrawn, and 2) prevent grapple disengagement when the grapple is loaded. The minimum submerged cable weight of the NF500 mast is approximately 180 pounds. The submerged weight of a channeled fuel bundle is approximately 650 pounds. Therefore, the proposed main hoist loaded interlock setpoints of 700 ± 50 pounds will still ensure that the associated interlocks will be initiated when the weight of a channeled fuel bundle is applied to the grapple. Additionally, the maximum cable weight of the NF500 mast (fully retracted) is approximately 660 pounds. Therefore, the loaded interlock setpoints must be sufficiently above this weight to ensure that a "false" hoist loaded signal does not hamper refueling activities. The proposed interlock setpoint of 700 ± 50 pounds also maintains this basis.

Basis For No Significant Hazards Consideration

According to 10CFR50.92, a proposed change to the license (Technical Specifications) involves no significant hazards consideration if operation of the facility in accordance with the proposed change would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. The proposed changes are evaluated against each of these criteria below.

(1) As discussed in USAR Section 15.7.4, a Fuel Handling Accident (FHA) is postulated to occur as a consequence of a failure of the fuel assembly lifting mechanism which results in the dropping of a raised fuel assembly onto fuel bundles either loaded in the core or stored in spent fuel storage racks. In Chapter 15 of the USAR, two different FHAs are considered: 1) a postulated FHA in the containment in which a fuel bundle is dropped onto irradiated fuel loaded in the core, and 2) a postulated FHA in the fuel building in which the bundle is dropped onto irradiated fuel stored in the spent fuel storage racks. As documented in the USAR, the postulated fuel building FHA results in higher offsite radiological releases than the postulated containment FHA. However, because the NF500 refueling mast will not be used in the fuel building, the current fuel building FHA analysis is not changed.

This proposed change does not result in a change to any of the assumptions of the postulated containment FHA. The refueling platform main hoist incorporates redundant lifting features (e.g., dual cables) so that no single component failure will result in a fuel bundle drop. The design of the grapple is not being changed as a result of this proposed change. The NF500 mast is similar in design and function to the currently installed NF400 mast. The NF500 mast is designed to match

or exceed all aspects of the currently installed NF400 mast. Additionally, interlocks on the platform prevent unsafe operation over the reactor vessel during control rod movements, prevent collision with the auxiliary platform, limit travel of the fuel grapple, and interlock grapple hook engagement with hoist power. The proposed main hoist overload cutoff setpoint will still ensure that excessive lifting forces are not applied to a fuel bundle and the proposed main hoist loaded setpoints will still ensure that the associated interlocks are initiated when the weight of a channeled fuel bundle is applied to the grapple. Further, the maximum height from which a fuel bundle could be dropped remains unchanged as does the minimum required water level above stored irradiated fuel. Therefore, the proposed change will not increase the probability or the consequences of any accident previously evaluated.

(2) No new failure modes will be introduced as a result of this proposed change. The NF500 mast is similar in design and function to the currently installed NF400 mast. The NF500 mast is designed to match or exceed all aspects of the currently installed NF400 mast. Additionally, the design of the grapple is not being changed as a result of this proposed change. The proposed main hoist overload cutoff setpoint will still ensure that excessive lifting forces are not applied to a fuel bundle and the proposed main hoist loaded setpoints will still ensure that the associated interlocks are initiated when the weight of a channeled fuel bundle is applied to the grapple. Therefore, this proposed change cannot create a new or different kind of accident from any accident previously evaluated.

(3) The proposed main hoist overload cutoff and main hoist loaded interlock setpoints merely account for the increased weight of the NF500 mast. The proposed main hoist overload cutoff setpoint of 1600 $\pm$ 50 pounds still ensures that excessive lifting forces are not applied to a fuel bundle. The proposed main hoist loaded interlock setpoints of 700 $\pm$ 50 pounds still ensure that the associated interlocks are initiated when the weight of a channeled fuel bundle is applied to the grapple. As a result, there is no significant reduction in the margin of safety.

Based upon the foregoing, IP concludes that these proposed changes do not involve a significant hazards consideration.

REFUELING OPERATIONS

3/4.9.6 FUEL HANDLING EQUIPMENT

REFUELING PLATFORM

LIMITING CONDITION FOR OPERATION

3.9.6.1 The refueling platform shall be OPERABLE and used for handling fuel assemblies or control rods within the reactor pressure vessel.

APPLICABILITY: During handling of fuel assemblies or control rods within the reactor pressure vessel.

ACTION:

With the requirements for refueling platform OPERABILITY not satisfied, suspend use of any inoperable refueling platform equipment from operations involving the handling of control rods and fuel assemblies within the reactor pressure vessel after placing the load in a safe condition.

SURVEILLANCE REQUIREMENTS

4.9.6.1 Each refueling platform crane or hoist used for handling of control rods or fuel assemblies within the reactor pressure vessel shall be demonstrated OPERABLE within 7 days prior to the start of such operations with that crane or hoist by:

a. Demonstrating operation of the overload cutoff on the main hoist when the load exceeds ~~1200~~ 1600 ± 50 pounds.

b. Demonstrating operation of the overload cutoff on the frame mounted and monorail hoists when the load exceeds 500 ± 50 pounds.

c. Demonstrating operation of the uptravel interlock when uptravel brings the top of the irradiated fuel or control rods to 8 feet 6 inches below the water level.

d. Demonstrating operation of the downtravel mechanical cutoff on the main hoist when grapple hook down travel reaches 2-4 inches below fuel assembly handle.

e. Demonstrating operation of the slack cable cutoff on the main hoist when the load is less than 50 ± 10 pounds.

f. Demonstrating operation of the loaded interlock on the main hoist when the load exceeds ~~485~~ 700 ± 50 pounds.

g. Demonstrating operation of the main hoist raise power cutoff when the refueling platform area radiation monitor dose rate exceeds 10 mR/hr.

h. Demonstrating operation of the redundant loaded interlock (rod block) on the main hoist when the load exceeds ~~550~~ 700 ± 50 pounds.