

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244  
 AUTH. NAME: ROBER, R.W. AUTHOR AFFILIATION: Rochester Gas & Electric Corp.  
 RECIP. NAME: CRUTCHFIELD, D. RECIPIENT AFFILIATION: Operating Reactors Branch 5

SUBJECT: Forwards response to NRC questions re 840402 application  
 for amend to OL.W/three oversize drawings, two being  
 proprietary. One aperture card available in PDR. Two aperture  
 cards available in Central File.

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 TITLE: OR Submittal: USI A-36 Control of Heavy Load Near Spent Fuel-NUREG-06

NOTES: NRR/DL/SEP 1cy. 05000244  
 OL: 09/19/69

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*Dave Garton*

*2/28/85*

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ROGER W. KOBER  
VICE PRESIDENT  
ELECTRIC & STEAM PRODUCTION

TELEPHONE  
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July 6, 1984

Director of Nuclear Reactor Regulation  
Attention: Mr. Dennis M. Crutchfield, Chief  
Operating Reactors Branch No. 5  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Responses to NRC Staff Questions  
R. E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Crutchfield:

Attached are responses to NRC staff questions concerning our  
Application for Amendment to Operating License dated April 2,  
1984.

Very truly yours,

*Roger W. Kober*  
Roger W. Kober

8407170408 840706  
PDR ADCK 05000244  
PDR

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QUESTION 1:

From a plan review of the Auxiliary Building drawing and Figure 1-3, it appears that the range of travel of the crane hook will prevent it from being centered over the center of gravity of the two most westward storage racks. Therefore, a lateral force must be applied to these storage racks when they are being withdrawn and inserted into position in order to avoid mechanical interference with the adjacent storage racks. With the aid of drawings, describe and discuss how this lateral force will be developed, as well as the effects of this lateral load has on the reliability of the crane hoist. It should be noted that Chapter 2-3.2.3 of ANSI B30.2, "Overhead and Gantry Cranes" prohibit side pulls unless specifically authorized by a qualified person who has determined that the stability of the crane is not thereby endangered and that the various parts of the crane will not be overstressed.

RESPONSE:

The required lateral force will be developed by attaching a chainfall or winch cable to the main hook block. This chainfall or winch will be anchored to a temporary holding beam attached to columns P3, N3 and N'3 on the west side of the auxiliary building (see Drawing D-422-025). This is essentially the same method used in the 1976 reracking operation.

The effects of the resulting lateral loads on crane reliability have been discussed with C. F. Simmers, Inc. who is acting as our consultant providing design services to upgrade the auxiliary building crane to satisfy the requirements of NUREG-0554. Their main area of concern is possible accelerated wear of the grooves on the drum. After continued lifts drum wear and rope slippage could result. However, this lift will only be performed four times and any additional wear will not affect the overall structural integrity of the crane and its components. Additionally, the drum is due to be replaced as part of an overall crane upgrade to satisfy NUREG-0554, therefore, the long-term reliability of the crane will not be affected.



QUESTION 2:

It is noted that one of the proposed rack modifications will be to remove four lifter assemblies and to install modified bottom plates with lifting slots. Therefore, we conclude that there must be two different methods of handling the storage racks. With the aid of legible drawings, describe the two lifting methods and demonstrate their adequacy, as well as the adequacy of the storage rack lifting attachments. The discussion should indicate compliance with and justify all deviations from the guidance of 5.1.1(4) and 5.1.1(5) of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants."

RESPONSE:

The modified spent fuel storage racks for Region 2 will be re-installed into the Spent Fuel Pool using the same two spreader bars, installed diagonally across the top of the rack, that were used to remove the racks. However, the bayonet attachments at the top of the racks for removal will be replaced by bayonet attachments through cell bottom plates. The stainless steel vertical lifting adapters, each full length through the four cells, have a bayonet bottom end and a slotted top end. The adapter is rotated 90° to engage the bayonet. This lines up the top end slot with the spreader end plate which are then pinned together. This engagement at the top prevents the bayonet from rotating out of engagement at the bottom.

The handling equipment, thus described, provides a redundant lifting system, because each spreader with its two lifting adapters is capable of supporting the rack. The requirements of ANSI 14.6 are used to determine the allowable stresses. The calculated stresses are less than these allowables. The vertical lifting adapter is built as shown on drawing 8369-14. The lifting equipment and handling is as shown on drawing 8369-16.

Since the lifting rig is of special design, it is in compliance with Section 5.5.1(5) of NUREG-0612, as well as Section 5.5.1(4).





QUESTION 3.

With the aid of drawings describe and discuss the sequence of the steps to be taken during the reracking operations in order to maximize the distance from the stored spent fuel to the area where load handling operations will take place. In addition, demonstrate that a failure of the lifting rig, interposed between the storage rack and the crane hook will not cause the falling rack to tip and impact on stored spent fuel.

RESPONSE:

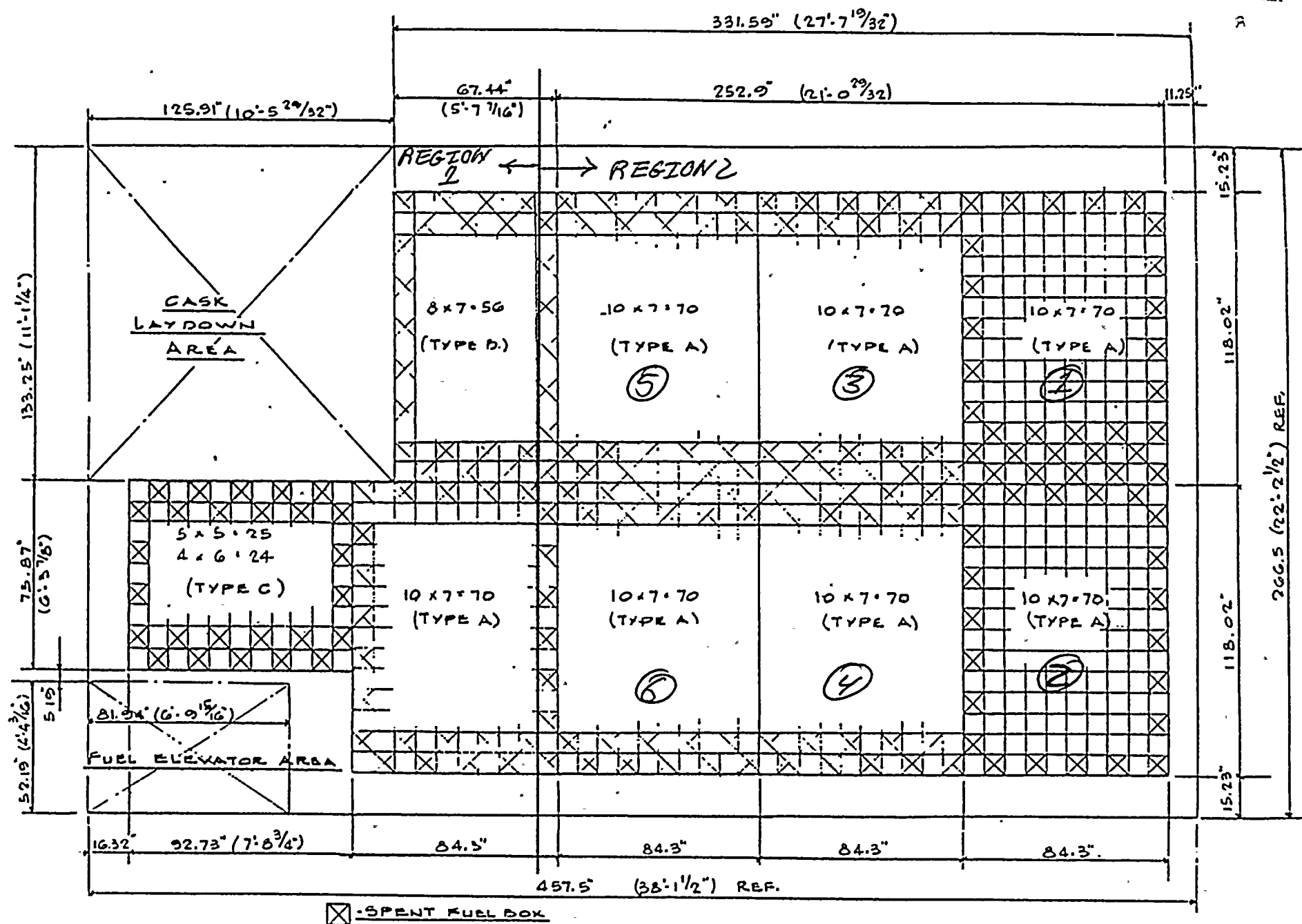
The modification will begin with rack #5 as shown on the attached figure. As indicated in an earlier telephone conversation, this sequence is a change from that specified in the submittal. Rack #5 will be moved vertically, then directly south over the decontamination pit (see figure 1-3 of the submittal). At least four empty rows of storage cells will be between the transported rack and any stored spent fuel. This is required for both a margin of safety in case of a load drop, and to minimize exposures to the divers who will be attaching the lifting adapters to the rack. After rack #5 has been decontaminated and moved to the work area by means of a safe load path, rack #3 will be removed and moved to the decon pit. After rack #5 has been returned to the pool and rack #3 moved to the work area, rack #1 will be removed. To remove racks #6, 4 and 2 on the north side of the pool, a load path will be created such that at least 3 empty rows of cells will be between the transported rack and stored spent fuel. An example for removal of rack #6 is attached.

A description of the lifting rig is provided in the response to question 2 and drawing 8369-16. The lifting rig is of a redundant design with each spreader bar independently supported from the crane hook and capable of holding the rack should the other spreader fail. Each spreader supports the rack over the center of gravity, therefore, upon failure of one spreader, the load would remain stable and would not swing.

Therefore, the distance to stored spent fuel and the dual independent spreader bar design provide a sufficient margin of safety for rack movement.



**FIGURE 1-1**



REGION 1 ← POISON PANEL → REGION 2

STORED  
FUEL

STORED  
FUEL

6

☒ WATER BOXES

☐ STORAGE  
CELLS

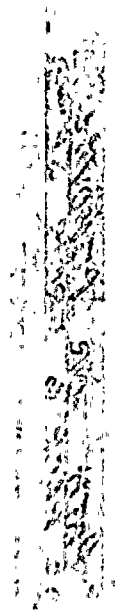
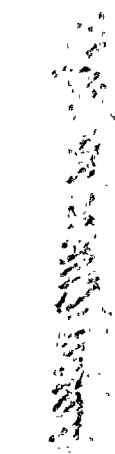
REGION 1  
50% STORAGE CAPACITY 176

REGION 2  
100% STORAGE CAPACITY 840

PATH FOR REMOVAL  
OF RACK 6 FROM SFP

TOTAL CAPACITY 1016

N



QUESTION 4:

In reference to the safe load paths, procedures, crane operator training and qualifications, and crane inspection and maintenance, identify and justify all exceptions to the guidance in Section 5.1.1 of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants" during the reracking operations.

RESPONSE:

RG&E takes no exceptions to the requirements outlined in Section 5.1.1 of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants."

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