

YANKEE ATOMIC ELECTRIC COMPANY



20 Turnpike Road Westborough, Massachusetts 01581

October 28, 1976



United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation

Reference: (a) License No. DPR-3 (Docket No. 50-29)
(b) Letter, D. E. Vandenburg, Yankee Atomic Electric
Company to NRC dated September 25, 1975;
Proposed Change No. 131.

Dear Sir:

This letter is in response to your questions concerning the installation of the new spent fuel racks at Yankee Rowe (Reference b).

In order to install the new spent fuel racks the roof hatches over the spent fuel pool must be removed. The maximum weight of any one hatch is approximately 1800 lbs. The hatches are rectangular in shape and have a lifting eye in each corner. Procedural control will be instituted to ensure proper handling of the hatches. The procedure will incorporate the following:

- a) A crane with at least a five ton capacity will be used.
- b) Two independent lifting slings each with a rated capacity of five tons will be used. Each sling will attach the crane hook with two of the lifting eyes on the hatch.
- c) The hatches will not be lifted more than two feet above the spent fuel pool roof.

An analysis was performed concerning a "drop rack accident".

11-1-76

INPUT DATA

DL

Drop Height	--	52 feet
Weight of Rack	--	12,600 lbs
Drag Coefficient	--	1.0
Drag Area	--	26.9 ft ²
Rack Stiffness	--	5.58 x 10 ³ kip/ft
Floor Stiffness	--	3.0 x 10 ⁶ kip/ft

8010310 701

P

11055

RESULTS

Velocity entering Water	--	33.1 ft/sec
Velocity at Impact	--	17.7 ft/sec
Energy at Impact	--	61 kip/ft

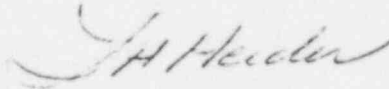
The above data indicates that the rack is approximately 500 times more flexible than the floor. It is obvious that virtually all of the impact energy will be absorbed by the deformation of the rack. Therefore no detrimental effect will occur to the pool floor by a dropped rack.

Per your requirement, we are presently evaluating an inspection procedure for in-situ testing for poison material in our racks. Upon completion of our experiments we will submit a written procedure outlining our inspection plan.

We trust you will find this information satisfactory; however, should you desire additional information, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY



L. H. Heider
Assistant Vice President

TMC/kg

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

TO:

N. R. C.

FROM:
Yankee Atomic Electric Company
Westborough, Mass
L. H. Heider

DATE OF DOCUMENT
10/28/76
DATE RECEIVED
11/1/76

LETTER
 ORIGINAL
 COPY

NOTORIZED
 UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED
Three signed

DESCRIPTION

Ltr. re their 9/25/75 ltr... concerning installation of the new spent fuel racks at Yankee Rowe.

(2-P)

PLANT NAME:
Yankee Rowe

ENCLOSURE

SAFETY

FOR ACTION/INFORMATION

ENVIRO

11/3/76

RJL

ASSIGNED AD:		ASSIGNED AD:
BRANCH CHIEF:	Schwencer (5)	BRANCH CHIEF:
PROJECT MANAGER:	Burger	PROJECT MANAGER:
LIC. ASST.:	Sheppard	LIC. ASST.:

INTERNAL DISTRIBUTION

REG FILE	SYSTEMS SAFETY	PLANT SYSTEMS	SITE SAFETY & ENVIRO ANALYSIS
NRC PDR	HEINEMAN	TEDESCO	DENTON & MULLER
I & E (2)	SCHROEDER	BENAROYA	
OELD		LAINAS	
GOSSICK & STAFF	ENGINEER G	IPPOLITO	ENVIRO TECH.
MIPC	MACCARRY	KIRKWOOD	ERNST
CASE	KNIGHT		BALLARD
HANAUER	SILWELL	OPERATING REACTORS	SPANGLER
HARLESS	PAWLICKI	STELLO	
PROJECT MANAGEMENT	REACTOR SAFETY	OPERATING TECH.	SITE TECH.
BOYD	ROSS	EISENHUT (L.H.)	GAMMILL
P. COLLINS	NOVAK	SHAO	STEFF
HOUSTON	ROSZTOCZY	BAER	HULMAN
PETERSON	CHECK	BUTLER	SITE ANALYSIS
MELTZ		GRIMES	VOLLNER
HEITEMES	AT & I		BUNCH
SKOVHOLT	SALTZMAN		J. COLLINS
	RUTBERG		KREGER

EXTERNAL DISTRIBUTION

LHDR: Greenfield, Mass.	NAT LAB:	BROOKHAVEN NAT LAB	CONTROL NUMBER
TIC:	REG. VII	ULRIKSON (ORNL)	
NSIC:	LA PDR		
ASLB:	CONSULTANTS		
AGES 16 CYS HOLDING SENT: CAT. B. (11/3/76)			

11055
POOR ORIGINAL