

VERMONT YANKEE NUCLEAR POWER CORPORATION



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REPLY TO
ENGINEERING OFFICE

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TELEPHONE 617-872-8100

July 30, 1985
FVY 85-68

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

Attention: Office of Nuclear Reactor Regulation
Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, R. W. Reid to R. H. Groce, dated January 28, 1977,
"Amendment No. 29 to Facility Operating License
No. DPR-28"
(c) Letter, VYNPC to USNRC, FVY 83-67, dated July 5, 1983
(d) Letter, USNRC to VYNPC, NPY 83-180, dated July 28, 1983
(e) Letter, VYNPC to USNRC, FVY 85-45, dated May 17, 1985
(f) Letter, USNRC to VYNPC, NPY 85-132, dated July 1, 1985

Subject: Request for NRC Review and Approval of Cask Lifting Device

Dear Sir:

Vermont Yankee currently has an inventory of activated reactor components which have served their useful life and now require disposal. Due to the radiation levels associated with these components, a shielded cask of the spent fuel type will be required to provide adequate shielding for transportation to a licensed disposal site. Vermont Yankee investigated the availability and suitability of existing casks and has determined that the General Electric Series 1500 cask is adequate for this purpose.

Reference (b) requires that any cask being used over the fuel pool at Vermont Yankee be evaluated to provide assurance that the redundancy of the Vermont Yankee Reactor Building crane will be maintained and that all such evaluations be reviewed and approved by the NRC prior to any movement of the cask. Subsequent to the issuance of Licensing Amendment No. 29 [Reference (b)] the NRC published NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." This document established criteria which would assure the safe handling of heavy loads in nuclear power plants. NUREG-0612 identifies two principle methods that may be used to insure compliance with regard to special lifting devices. These are:

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- (1) The use of lifting devices which are redundant or have two independent load paths from the cask to the crane hook. These lifting devices are designed such that they are capable of lifting three times the combined weight of the shipping cask plus the weight of intervening components without generating a combined shear stress or maximum tensile stress at any point in the device in excess of the material minimum yield strength. These devices are also designed such that they are capable of lifting five times the above weight without exceeding the material ultimate strength.
- (2) The use of lifting devices which are not redundant but are designed with additional increased factors of safety. These additional factors of safety are essentially double those of (1) above (i.e., six times the weight to minimum yield strength and ten times to ultimate strength).

Accordingly, this letter provides supporting information on the lifting device to be used by Vermont Yankee for this application and requests NRC approval of its use on the basis that the lifting device is designed with the increased factors of safety identified in NUREG-0612.

The General Electric Series 1500 cask lifting device has been designed and verified to meet the stress criteria and minimum factors of safety of NUREG-0612. The specific cask that will be used at Vermont Yankee will be chosen from an inventory pool of casks available from General Electric. All of these casks were preoperationally tested by subjecting each cask ear independently to a test load equal to 12,000#, which represents greater than 150% of the anticipated load per lifting lug. In addition, each of the General Electric designed lifting slings (specific for Vermont Yankee) will be preoperationally tested to a load equal to 10,880#, which represents 150% of calculated weight of the cask and payload.

The proposed lifting tool for lifting the Series 1500 cask consists of two lifting lugs, two shackles and two wire rope slings which connect to opposite sides of the crane's sister hook.

Using these conservative conditions, Vermont Yankee has determined that the design of the proposed lifting device is adequate to withstand the dynamic loads imposed by the overhead handling system under the postulated conditions. Review of this submittal does not involve a significant hazards consideration, and an application fee of \$150.00 is enclosed.

We trust that the information provided above is sufficient for your review of this lifting device.

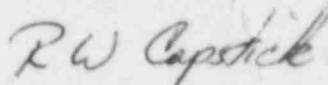
United States Nuclear Regulatory Commission
Attention: Mr. Domenic B. Vassallo

July 30, 1985
Page 3

Should you require additional clarification or information, please
contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



R. W. Capstick
Licensing Engineer

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