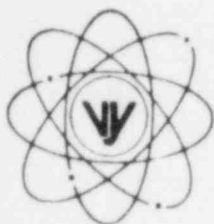


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

June 30, 1986

J. GARY WEIGAND

PRESIDENT AND
CHIEF EXECUTIVE OFFICER

(802) 257-5271

Dr. Harold Denton
Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Dear Dr. Denton:

Vermont Yankee Nuclear Power Corporation is undertaking a containment safety study on the Mark I containment of our Vermont Yankee plant. The plan for this study is attached. We will complete this study by September 1, 1986 and will transmit it to you. If you have comments on the study, we will address them promptly.

Our study will be divided into three parts as follows:

- 1) A design review of the VY containment
- 2) A specific evaluation of the probability of VY containment failure under severe accident scenarios involving core melt
- 3) Review of the current status and possible improvements in the areas of hydrogen control, containment sprays, pressure relief, core debris control and emergency procedures.

Vermont Yankee will also continue its active participation in the IDCOR and BWR Owners' Group, particularly those activities that address reactor containment issues. We are planning to perform an Individual Plant Evaluation (IPE) conforming to the methods approved by the NRC.

While we are confident that the Mark I containment of the Vermont Yankee plant provides a high degree of safety, we remain committed to investigating and implementing additional improvements to raise the level of safety even higher.

Sincerely,

JGW/jh
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VERMONT YANKEE NUCLEAR POWER CORPORATION

CONTAINMENT SAFETY STUDY

I. PURPOSE

The Vermont Yankee Nuclear Power Plant uses a General Electric Mark I pressure suppression containment. Under certain scenarios of severe accidents, analyses of pressure suppression containments indicate a higher probability of early failure than large, dry containments.

In order to update the existing information available, and to assess such information specifically for the design of the Vermont Yankee plant, this study will update and quantify risks associated with Vermont Yankee's Mark I containment and investigate concepts advanced to enhance the capabilities of Mark I containments.

II. SCOPE OF WORK

The work scope necessary to achieve the stated purpose is devisable into three separate subtasks as defined below:

1. Mark I Containment Design Review

This subtask will document 1) the Mark I containment utilized for analysis in the Reactor Safety Study (WASH-1400); 2) the original as-built Vermont Yankee Mark I containment; and 3) significant modifications made affecting containment capability between the time the Vermont Yankee plant was completed and the present.

2. Vermont Yankee Conditional Containment Failure Point Estimate

This subtask evaluates the differences in design or operation between the Mark I containment analyzed in the Reactor Safety Study (WASH-1400), which forms the basis for the quoted 90% conditional failure probability, and the currently existing Vermont Yankee containment. Significant differences will be tabulated and best estimate single point values will be assigned for each identified significant design or operational difference to adjust the WASH-1400 value for Vermont Yankee specific design features. A single point Vermont Yankee conditional containment failure probability will then be estimated.

3. Evaluation of Current Concerns Regarding Mark I Containments

This subtask will survey recently identified areas of concern, as discussed between the NRC and the nuclear industry in a meeting held at the NRC's offices in Bethesda, Maryland, on June 16, 1986. For each concern, specific application to Vermont Yankee will be examined. Additionally, design modifications to the Vermont Yankee plant will be considered.

VERMONT YANKEE NUCLEAR POWER CORPORATION

CONTAINMENT SAFETY STUDY

I. PURPOSE

The Vermont Yankee Nuclear Power Plant uses a General Electric Mark I pressure suppression containment. Under certain scenarios of severe accidents, analyses of pressure suppression containments indicate a higher probability of early failure than large, dry containments.

In terms of overall societal risk, both the nuclear industry, through the IDCOR effort, and cognizant regulatory authorities concur that existing containment designs effectively and adequately protect the public health and safety.

No recent, thorough studies have been performed on Mark I containments taking into consideration current configuration and modern analytical techniques. This lack of current analytical results for Mark I containments forces reliance on antiquated studies known to be excessively conservative and inaccurate.

In order to update the existing information available, and to assess such information specifically for the design of the Vermont Yankee plant, this study will update and quantify risks associated with Vermont Yankee's Mark I containment and investigate concepts advanced to enhance the capabilities of Mark I containments.

II. SCOPE OF WORK

The work scope necessary to achieve the stated purpose is devisable into three separate subtasks as defined below:

1. Mark I Containment Design Review

This subtask will document 1) the Mark I containment utilized for analysis in the Reactor Safety Study (WASH-1400); 2) the original as-built Vermont Yankee Mark I containment; and 3) significant modifications made affecting containment capability between the time the Vermont Yankee plant was completed and the present.

Work elements and study deliverables for this subtask will include:

- o Documentation and description of Mark I significant design and operational features as used in the Reactor Safety Study (WASH-1400).

- o Documentation and description of the Vermont Yankee Mark I containment significant design and operational features as existed in the original plant design.
- o Tabulation, with a short narrative description, of all design and operational modifications made to the Vermont Yankee plant affecting containment capability made between the original design and the present.
- o Documentation and description of Vermont Yankee significant design and operational features, that are different from the Mark I plant used in the Reactor Safety Study (WASH-1400).

2. Vermont Yankee Conditional Containment Failure Point Estimate

This subtask evaluates the differences in design or operation between the Mark I containment analyzed in the Reactor Safety Study (WASH-1400), which forms the basis for the quoted 90% conditional failure probability, and the currently existing Vermont Yankee containment. Significant differences will be tabulated and best estimate single point values will be assigned for each identified significant design or operational difference to adjust the WASH-1400 value for Vermont Yankee specific design features. A single point Vermont Yankee conditional containment failure probability will then be estimated.

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Work elements and study deliverables for this subtask will include:

- o Review and discuss Vermont Yankee specific applicability of the five Items of Concern identified during the June 16, 1986 meeting:
 - Hydrogen Control
 - Containment Sprays
 - Containment Pressure Control
 - Core Debris
 - Training and Procedures

- o Review commitments on the Vermont Yankee docket. Any such commitments of relevance to the study purpose will be identified and discussed.
- o Review industry and NRC proposals for containment modifications to improve performance in the area of the five concerns.
- o Identify potential worthwhile design modifications for VY and write design study proposals.
- o Identify potentially worthwhile procedure improvements. Develop a schedule for writing and implementing these procedure improvements.

III. SCHEDULE

The scope of work described for this Containment Capability Design Review will be concluded by August 31, 1986.