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August 22, 2002
BVY 02-59

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Request for Relief from the American Society of Mechanical Engineers
Code for Repair of a Pin-Hole Leak in a Lube Oil Cooler

Pursuant to 10CFR50.55a(a)(3)(ii), Vermont Yankee (VY) hereby requests approval to delay the repair of a minor pin-hole leak on the Service Water side of the "A" Emergency Diesel Generator (EDG) lube oil cooler until the 2002 refuel outage. The EDG lube oil cooler is a Safety Class 3 component.

The identified condition has been evaluated in accordance with Generic Letter 91-18 and VY has concluded that the "A" EDG remains fully capable of performing its safety functions. At present, the EDG is experiencing only very minor leakage. A mechanical device was not considered necessary to prevent further leakage and will not be installed at this time. VY believes that performing an on-line repair poses an unusual difficulty without a compensating increase in quality and safety.

Attachment 1 provides the information supporting this request. We trust that this information is adequate to support the requested action, however; should you need additional information please contact Mr. Jim DeVincentis at (802) 258-4236.

Sincerely,

Gautam Sen
Licensing Manager

Attachment
cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS
Vermont Department of Public Service

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Docket No. 50-271
BVY 02-59

Attachment 1

Vermont Yankee Nuclear Power Station

Information Supporting Requested ASME Code Relief

BACKGROUND

On April 22, 2002, Vermont Yankee (VY) identified a pin-hole sized leak on the Service Water (SW) side of the "A" Emergency Diesel Generator (EDG) Lube Oil Cooler. The leakage was less than 1 drop per minute. The leak is approximately 1/16" from the toe of the flange to head weld and is in the heat affected zone of the weld. The flange and the channel head are both fabricated from carbon steel.

An immediate assessment of the impact of the condition on operability was completed consistent with Generic Letter 91-18. VY concluded that the identified leakage did not impact the operability of the "A" EDG or have the potential to impact other safety-related equipment in the area.

A repair plan was developed and scheduled to repair the component during July 2002. However, during testing of the "B" EDG the need for corrective maintenance was identified that resulted in deferral of the "A" EDG repair.

The next opportunity to repair the component, that will maximize "A" SW and "A" EDG availability, is the 2002 Refuel Outage that is scheduled for October 2002. VY is already scheduled to take the "A" SW system out of service during the refuel outage and will accomplish the "A" EDG repair at that time.

REQUIREMENT FOR WHICH RELIEF IS REQUESTED

The American Society of Mechanical Engineers Code, Section XI, IWA-4000 requires that a code repair be performed to restore the system's structural integrity back to original design requirements.

BASIS FOR RELIEF

The leak was identified following the maintenance conducted on the "A" EDG for this operating cycle. As such, unavailability had already been applied to perform the preventive and corrective maintenance determined necessary to maximize reliability of the engine. Irrespective of that, once the leak was identified VY scheduled a repair during the operating cycle. This work was ready to be performed with shifts staffed and all preparations in place, when alternate testing of the "B" EDG identified issues that had to be resolved prior to accomplishing the work on the "A" EDG.

The work on the "B" EDG was successfully performed and the issues resolved, but the work on the "A" EDG was delayed nearly four days. VY decided, due to fatigue levels of the established shift crews, that attempting to continue with the plans for the "A" EDG repair through the weekend and into the following week was not prudent or warranted based on the nature and significance of the leak. The work to repair the leak on the "A" EDG was put on hold and VY continued with the work previously planned and scheduled for the following week.

An opportunity to repair the leak exists during the planned refueling outage when the "A" SW system is taken out of service to modify the "A" RHRSW pump cooling water supply branch connection. Affecting the repair during the refueling outage will not unnecessarily increase the unavailability of the diesel engine.

Based on this, VY believes that performing an on-line repair poses an unusual difficulty without a compensating increase in quality and safety. VY proposes to perform the repair during the upcoming refueling outage when the "A" EDG is already scheduled to be out of service.

TECHNICAL ASSESSMENT OF CONDITION

At the time the leak was discovered, an engineering evaluation was completed to determine the impact of the identified condition on EDG operability. This assessment investigated the impact on the cooling function, structural integrity, and the potential for the condition to impact safety-related equipment in the area due to spraying on equipment or flooding in the area.

An assessment of the potential impact that fluid loss could have on the cooling function concluded that the less than 1 drop per minute leak would not have a significant impact on the 700 gallons per minute of SW flow required to cool the EDG or the seven day Alternate Cooling system inventory. VY performed visual inspections of the SW piping for both the "A" and "B" EDGs and no additional leaks were identified.

Ultrasonic Thickness (UT) measurements determined that the leak is due to localized pitting of the wall and identified some general thinning in the areas adjacent to the pin-hole. A conservative structural assessment, assuming that the flaw was 2.0 inches in length, through wall and using a conservative uniform wall thickness of 0.065 inches concluded that normal code stress limits remain satisfied.

There is no instrumentation or electrical components in the immediate vicinity of the leak and the observed leak is extremely small with no fluid jet streaming. Therefore, issues relative to spray impingement on safety related equipment are not of concern.

VY has performed a cause assessment and concluded that the condition is due to Microbiologically Induced Corrosion (MIC) of the carbon steel material. Based on this, the component will be periodically subject to future UT inspections.

From a risk perspective, the flaw characteristics are such that crack propagation leading to catastrophic failure is not a credible failure mode. Thus an increase in "A" EDG room flooding event frequency is not expected. Also, the flaw characteristics and location are such that EDG failure due to flow diversion or spray impingement, on support equipment susceptible to failure from water intrusion, are not considered credible events. Based on the above evaluation, there is no increase of core damage frequency (CDF) due to the existing condition of the "A" EDG lube oil cooler. Therefore, the risk assessment becomes a matter of comparing the probable increase in CDF between performing the repair (which will require that the "A" EDG be removed from service) while the reactor is at power versus during the upcoming RFO23. It is worth noting that the availability of the Vernon Tie line (VY's Station Blackout power source) as a supplementary emergency power supply for either "A" or "B" EDG, results in a lowered risk achievement worth (RAW) for an individual diesel. It is the general consensus, based on industry and government studies, that the average risk of core damage while shutdown is lower than the risk of core damage with the reactor at power. Additionally, risk management strategies are available while shutdown to provide a means to significantly reduce this risk. It is therefore concluded that the risk is reduced by performing the repair of the "A" EDG heat exchanger leak during the refuel outage compared to performing it while the reactor is at power.

The above evaluation has demonstrated that the identified condition does not have the potential to adversely impact safe operation or public health and safety until such time that a component repair or replacement can be completed. VY will repair or replace the leak before start-up from the 2002 refueling outage.

PROPOSED ALTERNATIVE REQUIREMENTS

On April 22, 2002, VY performed an initial UT measurement of the subject area around the leak to verify structural integrity. To provide assurance against undetected degradation of the leak area, a follow up UT measurement was performed on August 12, 2002. The UT measurements were taken in selected areas of the lube oil cooler that provided a representative comparison with measurements taken in and around the leak location shortly after the leak was originally discovered. Within the accuracy of the UT instrument, the current wall thickness of the lube oil cooler in the area adjacent to the leak shows essentially the same wall thickness as was originally found when the leak occurred. There is no evidence of a trend in increased general corrosion, and no evidence of any additional pitting.

VY performs a routine inspection of the EDG piping once per shift looking for system leaks. A specific inspection of the "A" EDG Lube Oil Cooler will be performed each shift until the component is repaired or replaced during the 2002 Refueling Outage.

SUMMARY OF VERMONT YANKEE COMMITMENTS

BVY NO.: 02-59 Request for Relief from the American Society of Mechanical Engineers Code for Repair of a Pin-Hole Leak in a Lube Oil Cooler

The following table identifies commitments made in this document by Vermont Yankee. Any other actions discussed in the submittal represent intended or planned actions by Vermont Yankee. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager of any questions regarding this document or any associated commitments.

COMMITMENT	COMMITTED DATE OR "OUTAGE"
Repair or Replace the EDG LO Cooler prior to start-up from the 2002 refuel outage.	2002 Refuel Outage