

**PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE** - PNO-I-07-008

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

**Facility**

Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
Unit 1  
Brattleboro, VT  
Docket: 50-271

**Licensee Emergency Classification**

☐ Notification of Unusual Event  
☐ Alert  
☐ Site Area Emergency  
☐ General Emergency  
☒ Not Applicable

Subject: RESTORATION OF WEST COOLING TOWER

Vermont Yankee returned the West cooling tower to service at approximately 11:00 p.m. on Thursday, September 13. The cooling tower, which is comprised of eleven cells, was taken out-of-service on August 21, 2007 following the collapse of a non-safety related cell. This cell, designated cell 2-4, was not returned to service with the rest of the tower. Structural repairs have been completed, but the cell's non-structural fill material has not been re-installed.

Vermont Yankee has two cooling towers, which as previously noted, each tower consists of eleven cells. Only one cell, designated cell 2-1, is considered to be safety-related. This safety-related cell has a more robust construction than the non-safety related cells, and was unaffected by the collapse of cell 2-4.

Entergy's preliminary determination is that the collapse of cell 2-4 is attributable to several factors, including iron salt formation and fungal attack. The formation of iron salts in wood occurs where iron-containing hardware contacts the lumber, degrading the lumber's structure. The growth of fungus at this site can also damage the wood. This degradation resulted in the weakening and deformation of the heavily loaded vertical timbers that supported the water distribution pipe at the top of cell 2-4. Safety-related cell 2-1 is a more robust structure and uses stainless steel bolts, which is not susceptible to the iron salt formation associated with the carbon-steel connections used in some non-safety related cells.

The NRC Resident Inspectors permanently assigned to the Vermont Yankee site, as well as a structural expert from the NRC's headquarter's office, independently inspected the exterior of the cooling towers and accessible internal portions of the safety-related cell. The NRC determined that cell 2-1 appeared to be in good condition. The NRC monitored the licensee's investigation, assessed Entergy's preliminary root cause analysis, and verified key assumptions in determining the continued operability of cell 2-1. The adequacy and thoroughness of Entergy's past inspections of the cooling towers are currently under review.

Inquiries have been received from select Congressional offices in Vermont and Massachusetts.

The NRC Region I office has notified the State of Vermont, the Commonwealth of

Massachusetts, and the State of New Hampshire regarding the restoration of the cooling tower.  
This preliminary notification is being issued for information only.

ADAMS Accession Number: ML072570337

Contacts:	R. Powell (610) 337-6967 rjp@nrc.gov	B. Norris (610) 337-5111 bsn@nrc.gov	N. Sieller (610) 337-5380 nss@nrc.gov
-----------	--	--	---

DISTRIBUTIONS:

BY E-MAIL:

OWFN

Chairman Klein

Comm. Jaczko

Comm. Lyons

OIP

OCA

OGC

EDO

OE

NRR

SECY

Regional Offices

TWFN

NMSS

OIG

RES

BY FAX:

DOT:Trans

INPO

NSAC

RI Resident Office

Licensee: Entergy Nuclear Operations, Inc.

Vermont Yankee Nuclear Power Station

ADAMS: ML

**SUNSI Review Complete:     RJP     (Reviewer's Initials)**

Document Name: C:\FileNet\ML072570337.wpd

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure  
"N" = No copy

OFFICE	RI/DRP		RI/POA		RI/ORA		RI/DRP	
NAME	*RPowell		*DScrenci/NSS for		*NMcNamara		*DLew	
DATE	09/14/07		09/14/07		09/14/07		09/14/07	
OFFICE	ORA							
NAME	MDapas/MLD							
DATE	09/14/07							

OFFICIAL RECORD COPY