

... a long time within the nuclear establishment.

First we will look at the safety record set by reactors themselves.

Across is a small section of a computer print-out of "abnormal occurrences" (AO) for 1973. This page details some of the 39 AOs reported at the Vermont Yankee nuclear plant on the Connecticut River in Vernon, Vermont. This plant has had a particularly bad operating record. During one 19 month period of operations it was shut down 17 times. Its record makes it one of the 10 worst nukes in the country.

Some of the AOs are examples of small component failures. Others, as the last listed seem more ominous. It tells of "an apparent detonation" in the off-gas system which led to "radioactive releases," which were, however, "within allowable limits." Note that the amount of radiation released was not given, just the fact that the releases were "legal."

The detailed listing of AOs from nukes nationwide was getting staggeringly long when the definition of an AO was conveniently changed by the Energy Reorganization Act of 1974. The new definition of AOs, now known as "reportable occurrences," was very strict, limiting the list only to cases where there was proven potential of radioactive release, catastrophic accident, etc. In the first five months of 1973 alone, there were about 850 AOs reported to the AEC from 30 reactors. Under the new definition, only 6 "incidents" were reported in the first six months of 1975!

In the "Summary of Abnormal Occurrences Reported to the AEC During 1973," there was a total of 850 "events" listed. Of these, the AEC graded 55% (461 events) of the total "insignificant,"

... significant." The report says that half of the reported events were direct or potential safety significant. What it didn't say was that 44% of the directly significant events at boiling water reactors fared the same. Of the 77.7% were reported in GE reactors.

The 1973 AO roster gives an indication of what goes wrong at a reactor. Component failure led to 442 of the AOs (442 events), while personal error was the stated cause of 132 events. Other causes were procedures, and "unspecified reasons."

In 1973, the Browns Ferry reactor in Alabama led the list in number of events reported, with 65. This is interesting because it was that reactor's first year of operation. Two years it would be the scene of one of the worst nuclear accidents to happen in the U.S. (See p. 120.)

Some reactor accidents—or accidents—seem almost absurd if you realize that "some day these problems may result in a nuclear accident which renders several states of the Nation uninhabitable." (Senator Gravel of Alaska.) In March 1972, Senator Gravel read this one into the Congressional Record:

From ROE 69-10 [ROE means reactor operating experiences an AEC regular report] we learn that, during a routine check at a power reactor, abnormal radioactivity was observed in the building water distribution. The presence of radioactivity was confirmed in the plant drinking fountains. The contamination was found to have arisen from an inappropriate cross-connection between a 3,000-gallon radioactive waste tank and the water

FACILITY/ SYSTEM/ COMPONENT/ CAUSE CODE	DOCKET NO.	EVENT DATE/ REPORT DATE/ REPORT TYPE	AGR ANNUAL REPORT FOR 1973	EVENT DESCRIPTION/ CAUSE DESCRIPTION
VERMONT YANKEE-1 EMERGENCY CORE COOLING SYSTEM SENSORS, PRESSURE COMPONENT FAILURE	050-0271	071173 071973 30 DAY	A BARTON MICROSWITCH INSTALLED IN DP15-2-129 B FAILED TO ACTUATE AT THE REQUIRED SET POINT OF 1.5 PSIO. AO-73-21.	
VERMONT YANKEE-1 PERS. PROT. RAD. MONITORING SYS RADIATION MONITORS PERSONNEL ERROR	050-0271	073073 073173 10 DAY	THE MICROSWITCH ARM WAS MECHANICALLY BOUND AND FAILED TO DROP AT THE SET POINT. FOUR RADIATION MONITORS WERE NOT SOURCE CALIBRATED AT THREE MONTH INTERVAL AS SPECIFIED IN TECH SPEC. REPORT AO-73-22.	
VERMONT YANKEE-1 PERS. PROT. RAD. MONITORING SYS ELECTRONIC FUNCTION UNITS COMPONENT FAILURE	050-0271	080273 080373 30 DAY	POWER SUPPLY FAILED AREA GAMMA MONITOR ON THE PERIMETER FENCE BECAME INOPERABLE	
VERMONT YANKEE-1 CONTAINMENT SYSTEMS PIPES, PIPE FITTINGS DESIGN ERROR	050-0271	081673 082273 30 DAY	INSTRUMENT LINES MONITORING SUPPRESSION CHAMBER PRESSURE WERE INCORRECTLY TUBED TO DIFFERENTIAL PRESSURE SENSORS WHICH OPERATE PRESSURE SUPPRESSION CHAMBER-REACTOR BLDG VACUUM BREAKERS. TECH SPEC VIOLATION SECTION 3.7-A.3-A. LINE CORRECTIONS WERE MADE AND ALL SIMILAR PLANT SENSORS WERE INSPECTED. AO-73-24 INSTALLATION DRAWINGS WERE IN ERROR FOR THESE SENSORS. DRAWINGS WERE CORRECTED.	
VERMONT YANKEE-1 OFFGAS SYSTEM OTHER OR NOT KNOWN COMPONENT FAILURE	050-0271	090373 091773 10 DAY	CAUSE OF RUPTURE DISC BURSTING IS UNDER INVESTIGATION. SYSTEMS WERE REPAIRED AND TESTED PRIOR TO RETURN TO OPERATION	
VERMONT YANKEE-1 OFFGAS SYSTEM OTHER OR NOT KNOWN COMPONENT FAILURE	050-0271	090373 091773 10 DAY	DURING OPERATION, AN APPARENT DETONATION IN OFF-GAS SYSTEM FRACTURED AIR EJECTOR RUPTURE DISC. OFF-GAS SYSTEM THEN VENTED TO BLDG. SECURED BLDG VENTILATION SYSTEM AND SHUTDOWN REACTOR. RADIOACTIVE GASEOUS RELEASES WERE WITHIN TS VALVES. (AO-73-26.) DURING OPERATION, AN APPARENT DETONATION IN OFF-GAS SYSTEM FRACTURED THE AIR EJECTOR RUPTURE DISC. RADIOACTIVE RELEASES WERE WITHIN ALLOWABLE LIMITS. EXTENSIVE INVESTIGATION DID NOT IDENTIFY POSITIVE DETONATION SOURCE. PRIOR TO STARTUP, NEW OPERATIONS PROCEDURE AND CONTINUOUS AIR PURGE ARE USED. RECURRENT EVENT. NO EXACT CAUSE IDENTIFIED. NO ELECTRICAL STORMS IN AREA. EXTENSIVE INVESTIGATION DID NOT IDENTIFY SOURCE. ISSUED NEW EMERGENCY OPS PROCEDURE AND INTRODUCED CONTINUOUS AIR PURGE TO SYSTEM.	

(DAYS LATER)