LICENSEE: WASHINGTON PUBLIC POWER SUPPLY SYST
SITE: WASHINGTON NUCLEAR 2 EN NUMBER:26107
DOCKET: 05000397 EVENT DATE: 09-23-93
RX TYPE: BWR EVENT TIME: 13:30
VENDORS: GE-5 NOTIFY DATE: 09-23-93
EMERGENCY CLASS: N/A REGION: 5 STATE: WA TIME: 16:57
OPS OFFICER: RUDY KARSCH
10 CFR SECTION: AOUT 50.72(b)(1)(ii)(B) OUTSIDE DESIGN BASIS

| UNIT | SCRAM CODE | RX CRIT | INIT PWR | INITIAL MODE | CURR PWR | CURRENT MODE |
|---|---|---|---|---|---|---|
| 2 | N | Y | 100 | POWER OPERATION | 100 | POWER OPERATION |

A HIGH ENERGY LINE BREAK (HELB) OUTSIDE CONTAINMENT MIGHT LEAD TO ENVIRONMENTAL CONDITIONS WHICH ARE NOT BOUNDED BY EXISTING 10CFR50.49 ANALYSES AND COULD DAMAGE 1E INSTRUMENTATION.

THE FOLLOWING IS THE TEXT OF A LICENSEE FAX:
"A PROGRAMMATIC ENGINEERING REVIEW OF HIGH ENERGY LINE BREAK ANALYSIS ASSUMPTIONS COMBINED WITH LEAK DETECTION CAPABILITY HAS IDENTIFIED TWO UNANALYZED HELB CONDITIONS OUTSIDE THE DESIGN BASIS. THIS REVIEW WAS PERFORMED IN RESPONSE TO A NOTIFICATION FROM GENERAL ELECTRIC COMPANY TO ALL BWR OWNERS IN MAY 1989. THE REVIEW OF CALCULATIONS AND HARDWARE HAS BEEN EXTENSIVE INVOLVING OVER 160 BREAK LOCATIONS AND 100 LEAK DETECTORS AND IS NOW NEARING COMPLETION. THE BREAKS ARE LOCATED IN THE REACTOR BUILDING (SECONDARY CONTAINMENT) AT APPROXIMATELY THE MID ELEVATION OF THE STRUCTURE.

"THE FIRST BREAK INVOLVES A FOUR INCH REACTOR WATER CLEANUP (RWCU) LINE, RWCU(5)-3. THE POSTULATED BREAK IS LOCATED AT THE BLOWDOWN FLOW CONTROL VALVE, RWCU-FCV-33, AT THE REACTOR BUILDING 501 FOOT ELEVATION. THE BREAK INVOLVES ASME SECTION III CLASS 3 PIPING. DURING POWER OPERATION THIS LINE OPERATES AT REACTOR PRIMARY COOLANT PRESSURE AT A TEMPERATURE OF APPROXIMATELY 125 DEGREES F. IF A BREAK IS POSTULATED THE TEMPERATURE OF THE WATER DISCHARGED WOULD RAPIDLY (WITHIN A FEW SECONDS) APPROACH REACTOR COOLANT TEMPERATURE. A BREAK IN THIS LINE WOULD IMPACT THE ENVIRONMENTAL PROFILE OF EQUIPMENT NOT ENCLOSED IN PROTECTED ROOMS IN THE REACTOR BUILDING. THE MOST IMMEDIATE IMPACT WOULD BE ON EQUIPMENT AT THE 501 ELEVATION BUT SINCE THE BUILDING HAS OPEN STAIRWELLS AND AN EQUIPMENT HATCH THE BREAK IS A CONCERN IN THE WHOLE BUILDING.

"THE SECOND BREAK INVOLVES A THREE INCH HEATING STEAM CONDENSATE (HCO) LINE, HCO(11)-2. THIS LINE OPERATES AT THREE PSIG AND 221 DEGREES F, JUST WITHIN THE CRITERIA FOR A HELB. THE POSTULATED BREAK IS AT THE REACTOR BUILDING 471 FOOT ELEVATION AT A PIPE ANCHOR ON THE RETURN LINE TO THE CONDENSATE RETURN TANK, CO-TK-1.

THE HCO BREAK IS LOCATED IN ANSI B31.1 PIPING. THE IMPACT OF THIS BREAK IS EXPECTED TO BE LIMITED BECAUSE OF THE LOW TEMPERATURE AND PRESSURE.

"A PRELIMINARY REVIEW OF THE AS-BUILT STRESS ANALYSIS REVEALED THAT STRESSES AT THE POSTULATED RWCU BREAK LOCATION ARE WELL BELOW THE STRESS LEVELS USED TO LOCATE PIPE BREAK LOCATIONS. EFFORTS ARE ALSO UNDERWAY TO EVALUATE THE IMPACT ON THE ENVIRONMENTAL PROFILE IN THE REACTOR BUILDING.

"A REVIEW OF THE INSTRUMENTATION ASSOCIATED WITH RWCU OPERATION SHOWS THAT DIVERSE NON-SAFETY RELATED INSTRUMENTATION WOULD DETECT A BREAK AT THE POSTULATED LOCATION AND LIMIT THE AMOUNT OF FLOW TO THE REACTOR BUILDING.

"BASED ON THE VERY LOW STRESS LEVELS AND THE INSTRUMENTATION AVAILABLE TO LIMIT THE IMPACT OF THE BREAK IT IS BELIEVED THE RWCU SYSTEM CAN BE CONSIDERED OPERABLE AND PLANT OPERATION CAN SAFELY CONTINUE."

THE LICENSEE INFORMED THE NRC RESIDENT INSPECTOR.

HOO NOTE: THE INSTRUMENTATION WHICH MITIGATES THE AFFECTS OF THIS HELB ARE A HIGH TEMPERATURE AT THE OUTLET OF NON-REGENERATIVE HEAT EXCHANGER, A HIGH D/P ACROSS THE FILTER/DEMINERALIZER AND A HIGH D/P ACROSS THE RESIN TRAP. THESE ARE NOT SAFETY RELATED INSTRUMENTS, AND THEIR SPEED OF ACTUATION VERSUS THE TEMPERATURE RISE HAS NOT BEEN ANALYZED. THE REACTOR BUILDING CONTAINS AN EXTENSIVE QUANTITY OF 1E INSTRUMENTATION IN OPEN RACKS. THE LICENSEE HAS NOT YET DETERMINED THE CONSEQUENCES OF A HELB.