

ATTACHMENT

DRESDEN NUCLEAR POWER STATION UNIT 2

Proposed Changes to Appendix A  
Technical Specifications to  
Provisional Operating License DPR-19

Affected Pages: 89  
90\*  
90a\*\*  
97  
98

\* This page includes changes proposed in the T. J. Rausch letter to H. R. Denton dated February 1, 1983.

\*\* New Page

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**3.6 LIMITING CONDITION FOR OPERATION**

2. The reactor coolant water shall not exceed the following limits with steaming rates less than 100,000 pounds per hour except as specified in 3.6.C.3:

Conductivity	2 $\mu$ mho/cm
Chloride ion	0.1 ppm

3. For reactor startups the maximum value for conductivity shall not exceed 10  $\mu$ mho/cm and the maximum value for chloride ion concentration shall not exceed 0.1 ppm, for the first 24 hours after placing the reactor in the power operating condition.
4. Except as specified in 3.6.C.3 above, the reactor coolant water shall not exceed the following limits with steaming rates greater than or equal to 100,000 pounds per hour.

Conductivity	5 $\mu$ mho/cm
Chloride ion	0.5 ppm

5. If Specification 3.6.C.1, 3.6.C.2, 3.6.C.3 or 3.6.C.4 is not met, an orderly shutdown shall be initiated.

**D. Coolant Leakage**

1. Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above 212°F, reactor coolant leakage into the primary containment from unidentified sources shall not exceed 5 gpm. In addition, the total reactor coolant system leakage into the primary containment shall not exceed 25 gpm. If these conditions cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown condition within 24 hours.

**4.6 SURVEILLANCE REQUIREMENT**

2. During startups and at steaming rates below 100,000 pounds per hour, a sample of reactor coolant shall be taken every four hours and analyzed for conductivity and chloride content.
3. a. With steaming rates greater than or equal to 100,000 pounds per hour, a reactor coolant sample shall be taken at least every 96 hours and when the continuous conductivity monitors indicate abnormal conductivity (other than short-term spikes) and analyzed for conductivity and chloride ion content.
- b. When the continuous conductivity monitor is inoperable, a reactor coolant sample should be taken at least daily and analyzed for conductivity and chloride ion content.

**D. Coolant Leakage**

1. Reactor coolant system leakage shall be checked by the sump and air sampling system. Sump flow monitoring and recording shall be performed once per 4 hours. Air sampling shall be performed once per day.

## 3.4 LIMITING CONDITION FOR OPERATION

2. After completion of the investigation or containment inspection, specified in 4.6.D.2.a or 4.6.D.2.b, if the leakage is determined to be due to a thru wall pipe crack on the reactor coolant pressure boundary, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown condition within 24 hours.

## E. Safety and Relief Valves

1. During reactor power operating conditions and whenever the reactor coolant pressure is greater than 90 psig and temperature greater than 320°F, all nine of the safety valves shall be operable. The solenoid activated pressure valves shall be operable as required by Specification 3.5.D.
2. If Specification 3.6.E.1 is not met, an orderly shutdown shall be initiated and the reactor coolant pressure and temperature shall be less than or equal to 90 psig and less than or equal to 320°F within 24 hours.

## 4.6 SURVEILLANCE REQUIREMENT

2. The following additional leakage limits shall be met until the recirculation piping indications have been resolved.

Whenever the reactor is at operating pressure, the following will apply to unidentified leakage;

- a. If a 1 gpm increase over the previous 4 hours occurs or when leakage equals 3 gpm total, an investigation of the cause of the leakage increase will be performed. This investigation should consist of taking drywell air and water samples, and a review of any previous plant evolutions to the extent necessary to determine the source of leakage.
- b. If leakage equals 4 gpm, a containment inspection will be conducted to determine the source of leakage.

## E. Safety and Relief Valves

A minimum of  $\frac{1}{2}$  of all safety valves shall be bench checked or replaced with a bench checked valve each refueling outage. The popping point of the safety valves shall be set as follows:

<u>Number of Valves</u>	<u>Set Point (psig)</u>
1	1135*
2	1240
2	1250
2	1260
2	1260

The allowable set point error for each valve is +1%.

## 3.4 LIMITING CONDITION FOR OPERATIONS

## 4.6 SURVEILLANCE REQUIREMENT

All relief valves shall be checked for set pressure each refueling outage. The set pressures shall be:

<u>Valve No.</u>	<u>Set Point (psig)</u>
203-3A	1124*
203-3B	1101
203-3C	1101
203-3D	1124
203-3E	1124

\* Target Rock Combination safety/relief valve.

The allowable set point error for each valve is  $\pm 1\%$ .

the operator for correcting the off-standard condition include, operation of the reactor clean-up system, reducing the input of impurities and placing the reactor in the cold shutdown condition. The major benefit of cold shutdown is to reduce the temperature dependent corrosion rates and provide time for the clean-up system to re-establish the purity of the reactor coolant. During start-up periods, which are in the category of less than 100,000 pounds per hours, conductivity may exceed 2  $\mu\text{mho/cm}$  because of the initial evolution of gases and the initial addition of dissolved metals. During this period of time, when the conductivity exceeds 2  $\mu\text{mho}$  (other than short term spikes), samples shall be taken to assure the chloride concentration is less than 0.1 ppm.

The conductivity at the reactor coolant is continuously monitored. The samples of the coolant which are taken every 96 hours will serve as a reference for calibration of these monitors and is considered adequate to assure accurate readings of the monitors. If conductivity is within its normal range, chlorides and other impurities will also be within their normal ranges. The reactor coolant samples will also be used to determine the chlorides. Therefore, the sampling frequency is considered adequate to detect long-term changes in the chloride ion content. Isotopic analyses required by Specification 4.6.C.3 may be performed by a gamma scan.

- D. Coolant Leakage - Allowable leakage rates of coolant from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes and on the ability to makeup coolant system leakage in the event of loss of offsite a-c power. The normally expected back-ground leakage due to equipment

design and the detection capability for determining coolant system leakage were also considered in establishing the limits. The behavior of cracks in piping systems has been experimentally and analytically investigated as part of the USAEC sponsored Reactor Primary Coolant System Rupture Study (the Pipe Rupture Study). Work utilizing the data obtained in this study indicates that leakage from a crack can be detected before the crack grows to a dangerous or critical size by mechanically or thermally induced cyclic loading, or stress corrosion cracking or some other mechanism characterized by gradual crack growth. This evidence suggests that for leakage somewhat greater than the limit specified for unidentified leakage, the probability is small that imperfections or cracks associated with such leakage would grow rapidly. However, the establishment of allowable unidentified leakage greater than that given in 3.6.D on the basis of the data presently available would be premature because of uncertainties associated with the data. For leakage of the order of 5 gpm as specified in 3.6.D, the experimental and analytical data suggest a reasonable margin of safety that such leakage magnitude would not result from a crack approaching the critical size for rapid propagation. Leakage less than the magnitude specified can be detected reasonably in a matter of a few hours utilizing the available leakage detection schemes, and if the origin cannot be determined in a reasonably short time the plant should be shutdown to allow further investigation and corrective action.

The additional leakage requirements will be in effect only while the reactor is operated with the recirculation flaws detected during the 1983 Refueling Outage. The additional leakage requirements will provide more conservative detection and corrective action should the current flaws propagate thru wall.

The capacity of the drywell sump is 100 gpm and the capacity of the drywell equipment drain tank pumps is also 100 gpm. Removal of 50 gpm from either of these sumps can be accomplished with considerable margin.

The performance of reactor coolant leakage detection system will be evaluated during the first five years of station operation and the conclusions of this evaluation will be reported to the NRC.

It is estimated that the main steam line tunnel leakage detection system is capable of detecting the order of 3000 lb/hr. The system performance will be evaluated during the first five years of plant operation and the conclusions of the evaluation will be reported to the NRC.

Inservice Inspections of ASME Code Class 1, 2 and 3 components will be performed in accordance with the applicable version of Section XI of the ASME Boiler and Pressure Vessel Code. Relief from any of the above requirements must be provided in writing by the Commission. The Inservice Inspection program and the written relief do not form a part of these Technical Specifications.

- E. Safety and Relief Valves - The frequency and testing requirements for the safety and relief valves are specified in the Inservice Testing Program which is based on Section XI of the ASME Boiler and Pressure Vessel Code. Adherence to these code requirements provides adequate assurance as to the proper operational readiness of these valves. The tolerance value is specified in Section III of the ASME Boiler and Pressure Vessel Code as + 1% of design pressure. An analysis has been performed which shows that with all safety valves set 1% higher higher the reactor coolant pressure safety limit of 1375 psig is not exceeded. The safety valves are required to be operable above the design pressure (90 psig) at which the core spray subsystems are not designed to deliver full flow.
- F. Structural Integrity - A pre-service inspection of the components in the primary coolant pressure boundary will be conducted after site erection to assure the system is free of gross defects and as a reference base for later inspections. Prior to operation, the reactor primary system will be free of gross defects. In addition, the facility has been designed such that gross defects should not occur throughout life.