

NOTES FOR TABLE 3.2.C

1. For the startup and run positions of the Reactor Mode Selector Switch, the Control Rod Withdrawal Block Instrumentation trip system shall be operable for each function. The SRM and IRM blocks need not be operable in "Run" mode, and the APRM (flow biased) and RBM rod blocks need not be operable in "Startup" mode. The Control Rod Withdrawal Block Instrumentation trip system is a one out of "n" trip system, and as such requires that only one instrument channel specified in the function column must exceed the Trip Level Setting to cause a rod block. By utilizing the RPS bypass logic (see note 5 below and note 1 of Table 3.1.1) for the Control Rod Withdrawal Block Instrumentation, a sufficient number of instrument channels will always be operable to provide redundant rod withdrawal block protection.
2. W is the recirculation loop flow in percent of design. Trip level setting is in percent of rated power (2381 MWt). N is the RBM setpoint selected (in percent) and is calculated in accordance with the methodology of the latest NRC approved version of NEDE-24011-P-A.
3. IRM downscale is bypassed when it is on its lowest range.
4. This function is bypassed when the count is  $\geq 100$  cps and IRM above range 2.
5. By design one instrument channel; i.e., one APRM or IRM per RPS trip system may be bypassed. For the APRM's and IRM's, the minimum number of channels specified is that minimum number required in each RPS channel and does not refer to a minimum number required by the control rod block instrumentation trip function. By design only one of two RBM's or one of four SRM's may be bypassed. For the SRM's, the minimum number of channels specified is the minimum number required in each of the two circuit loops of the Control Rod Block Instrumentation Trip System. For the RBM's, the minimum number of channels specified is the minimum number required by the Control Rod Block Instrumentation Trip System as a whole (except when a limiting control rod pattern exists and the requirements of Specification 3.3.B.5 apply).
6. IRM channels A,E,C,G all in range 8 or higher bypasses SRM channels A&C functions. IRM channels B,F,D,H all in range 8 or higher bypasses SRM channels B&D functions.
7. This function is bypassed when IRM is above range 2.
8. This function is bypassed when the mode switch is placed in Run.
9. This function is only active when the mode switch is in Run. This function is automatically bypassed when the IRM instrumentation is operable and not high.
10. The inoperative trips are produced by the following functions:
  - a. SRM and IRM
    - (1) Mode switch not in operate
    - (2) Power supply voltage low
    - (3) Circuit boards not in circuit

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## 5.0 MAJOR DESIGN FEATURES

### 5.1 Site Features

The Cooper Nuclear Station site is located in Nemaha County, Nebraska, on the west bank of the Missouri River, at river mile 532.5. This part of the river is referred to by the Corps of Engineers as the Lower Brownville Bend. Site coordinates are approximately 40° 21' north latitude and 95° 38' west longitude. The site consists of 1351 acres of land owned by Nebraska Public Power District. About 205 acres of this property is located in Atchison County, Missouri, opposite the Nebraska portion of the station site. The land area upon which the station is constructed is crossed by the Missouri River on the east and is bounded by privately owned property on the north, south, and west. At the west site boundary, a county road and Burlington Northern Railroad spur pass the site.

The reactor (center line) is located approximately 3600 feet from the nearest property boundary. No part of the present property shall be sold or leased by the applicant which would reduce the minimum distance from the reactor to the nearest site boundary to less than 3600 feet without prior NRC approval.

The protected area is formed by a seven foot chain link fence which surrounds the site buildings.

### 5.2 Reactor

- A. The core shall consist of not more than 548 fuel assemblies in any combination of 7x7 (49 fuel rods) and 8x8 (63 fuel rods) and 8x8R/P8x8R (62 fuel rods).
- B. The core shall contain 137 cruciform-shaped control rods. The control material shall be boron carbide powder ( $B_4C$ ) compacted to approximately 70% theoretical density, except for the Hybrid I control rods which contain approximately 15% hafnium.

### 5.3 Reactor Vessel

The reactor vessel shall be as described in Section IV-20 of the SAR. The applicable design shall be as described in this section of the SAR.

### 5.4 Containment

- A. The principal design parameters for the primary containment shall be as given in Table V-2-1 of the SAR. The applicable design shall be as described in Section XII-2.3 of the SAR.
- B. The secondary containment shall be as described in Section V-3.0 of the SAR.
- C. Penetrations to the primary containment and piping passing through such