

ATTACHMENT 4

PROPOSED REVISION

8312160031 BC1202  
PDR ADOCK 05000267  
P PDR

In addition to the reference fuel elements, eight test fuel elements are included in the reactor core. These eight test elements (FTE1-8) contain small quantities of test fuel particles that are in various ways different from the reference fuel. The description of the test fuel elements is contained in Table 6.1.1.

The coated fuel particles are bonded together with a carbonaceous material to form fuel rods. The fuel rods are completely surrounded and contained by graphite which forms the structural part of the fuel element and, in addition to the carbon contained within the fuel rods, also serves as the sole moderator. The reference fuel elements are fabricated from H-327 needle coke (anisotropic) graphite, as described in the Fort St. Vrain FSAR, Section 3.0. The test fuel elements are fabricated from H-451 near-isotropic graphite in anticipation of qualifying this material for future use in all reload fuel for the reactor.

Beginning with core Segment 9 (Reload 3), H-451 near-isotropic graphite is used in the fabrication of reload fuel elements in addition to or in place of the previous reference H-327 needle coke (anisotropic) graphite.

#### Reflector

Reflector elements above, below, and immediately adjacent to the side of the active core are hexagonal right prisms with nominal dimensions of 14.2 inches across flats and 15.6, 23.4, or 31.2 inches high, as required. The outer peripheral envelope of the reactor core reflector graphite contains boron to minimize the neutron flux leaving the reflector. The side reflector contains nominal 2.3 weight percent boron stainless steel pins

within the spacer blocks. The middle layer of lower reflector elements, excluding the central element in each core region, contains 25 weight percent boronated graphite pellets enclosed in hastalloy-X cans. The top layer of reflector above the hexagonal columns contains 1 weight percent crushed boronated graphite. The top layer of reflector above the permanent side reflector blocks contains 1 weight percent boronated graphite enclosed in steel cans.

Basis for Specification DF 6.1

The above specifications form the general design bases and criteria for the overall design features of the reactor core which were used to evaluate its general performance. Further details concerning these design features are given in Section 3.0 of the FSAR and the Safety Analysis Report for Fort St. Vrain Reload 1 Test Elements FTE-1 through FTE-8, General Atomic Document GLP-5495, June 30, 1977.

## ATTACHMENT 5

### SIGNIFICANT HAZARDS CONSIDERATIONS ANALYSIS

A review of Chapter XIV of the Final Safety Analysis Report (FSAR) identified six postulated accident conditions which required more detailed examination for potential impact from the substitution of H-451 graphite in Segment 9 for the fuel element block material. These accident conditions were discussed in this section and no requirement for additional analysis has been identified. It is concluded that the worst case conditions previously defined for accident analyses, and found to be acceptable during the FSAR review, are not exceeded as a result of introducing H-451 graphite in Segment 9. This result is consistent with the conclusions of Attachments 1, 2, and 3. This design change presents no unreviewed safety questions, as defined in 10CFR50.59

Based on the above, operation of Fort St. Vrain in accordance with the proposed change will not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. It is, therefore, apparent that no significant hazards considerations are involved.