

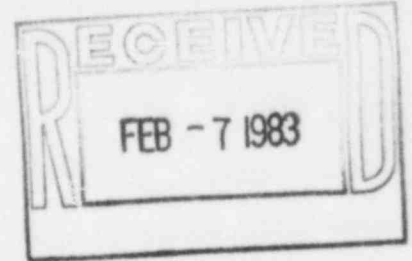


Public Service Company of Colorado

2420 W. 26th Avenue, Suite 100D Denver, Colorado 80201

January 28, 1983
Fort St. Vrain
Unit No. 1
P-83033

Mr. Phillip C. Wagner, Project Manager
Reactor Project Branch #1
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011



SUBJECT: H-451 Graphite Status

- REFERENCES: (1) William P. Gammill (NRC) letter to Colin Fisher (GA), "Evaluation of Topical Report GLP-5588," May 21, 1979
- (2) Steven A. Varga (NRC) letter to J.K. Fuller (PSC), "Approval of Use of H-451 Graphite in Fort Fort St. Vrain," October 5, 1979

Dear Mr. Wagner:

On May 21, 1979 the NRC staff completed its review of General Atomic Company Topical Report GLP-5588, "Safety Analysis Report - Use of H-451 Graphite in Fort St. Vrain Fuel Elements." It was concluded that the substitution of H-451 for H-327 graphite elements in the Fort St. Vrain reactor would result in negligible changes in the nuclear and thermal behavior of the core, and would not result in reduced safety margins or reliability compared to the H-327 core. It was also concluded that report GLP-5588 may serve as an acceptable reference and the initial basis for allowing substitution of H-451 graphite fuel and reflector elements for the reference H-327 elements (Ref. 1).

Final acceptance of H-451 graphite was made contingent in Reference 1 upon the following items:

1. Submittal of reports on the results of the then -ongoing graphite irradiation creep program.

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2. Submittal of reports on the post-irradiation examination of the eight H-451 test elements inserted in FSV with Reload Segment 7.
3. Submittal of evidence to support the performance predictions for graphite elements produced from different precursor materials or by different methods of fabrication, should such changes be made.

On October 5, 1979, the NRC approved the use of H-451 graphite in selected regions of Reload Segment 9 and all regions of subsequent reload segments subject to submittal of the above mentioned information (Reference 2).

Reload Segment 9, currently scheduled for loading during the second half of 1983, will be the first reload segment in which H-451 graphite will be used. A reload safety analysis report and a request for a change to Technical Specification DF6.1 will be submitted by PSC to NRC at least 90 days prior to startup following the refueling, as required by Branch Technical Position DOR-1, "Guidance for Reload Submittals."

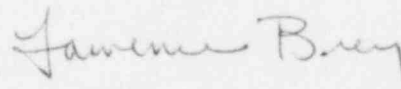
At the time of NRC's review of GLP-5588, several H-451 graphite creep tests were ongoing with regard to irradiation-induced graphite creep. The tests have now been completed, and the results of those tests and several other graphite creep tests have been reviewed by the GA staff. The results of this review are summarized in the report, "Irradiation-Induced Creep in Graphite: A Review," GA-A16402, August 1981. A copy of this report is enclosed in fulfillment of the NRC staff request.

Of the eight H-451 test elements inserted with Segment 7, only one, FTE-1, has been removed from the core. FTE-1 was subjected to nondestructive post-irradiation examination under a DOE-funded program. The results of that examination are described in GA Document No. 906599. A copy of that document also is enclosed in fulfillment of the NRC staff request. The examination showed that the structural performance and dimensional stability of FTE-1 were excellent.

To date, no changes have been made in the precursor materials or methods of fabrication of H-451 blocks.

If you have any questions regarding the enclosures, please let us know.

Very truly yours,



H. L. Brey, Manager
Nuclear Engineering Division

HLB/JPL:pa

Enclosures