

INTERIM REPORT

PDR

*NRC Research and/or Technical Assistance Report*

Accession No. \_\_\_\_\_

Contract Program or Project Title: HTGR Safety Program

Subject of this Document: Monthly Highlights Letter  
For August 1982

Type of Document: Monthly Highlights Letter

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Date of Document: September 14, 1982

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for the  
U.S. Department of Energy

Prepared for  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Under Interagency Agreement DE-AC02-76CH00016  
FIN No. A-3016

MONTHLY HIGHLIGHTS

August 1982

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This work was performed under the auspices of the United States Nuclear  
Regulatory Commission.

Density profiling of a final H-451 "cocoon" specimen has been completed. Data obtained confirm the surface burnoff "phenomena" to be artificial.

The Hopcalite catalyst for carbon monoxide control in the HIL has arrived, preliminary testing at operating conditions has begun.

Construction of the "concentrating" hydrogen gas chromatograph was begun this month. The system will incorporate a Ti gettering column to collect and concentrate low levels of hydrogen.

Owing to a decision to terminate the mechanical properties program, activities in the fatigue and creep testing laboratories were brought to a phased close-out. The last few long term high cycle fatigue tests on Hastelloy X loss-of-cooling accident simulations were completed. Detailed metallography and report preparation for the fatigue program will be completed within the next several months. All the creep tests in air and helium environments, thermal cycling tests in air, and aging tests in helium environments have been terminated in this month. A final report will be available as soon as metallography work on aborted specimens is completed.

The results of our early UCHA analyses up to depressurization were summarized in a draft report and distributed for comment to various members of the Siting Study. The main conclusion was that earlier than anticipated depressurization times of one to two hours are a possibility.

Simulations of primary loop cooldown after scram but without circulator trip required some more detailed modeling of the steam generator secondary side heat transfer. This has been accomplished. Preliminary results indicate a very rapid core cooldown to less than 700°F within about five minutes. These runs will be utilized for further UCHA analyses with loop cooldown prior to accident initiation.

Analyses of the thermal transient following depressurization, using the CORCON/SORS codes, are in progress. Initial and preliminary results for the case of intact liner cooling indicate peak top thermal barrier temperatures of 1650°F at about 85 hours.

An effort to estimate the fission product attenuation in the containment prior to release to the atmosphere is underway. Initial efforts considered the use of the CORRAL II code. First results from some trial runs based on input data obtained from GA-A15000 gave implausible plate-out characteristics for iodine in the containment. At the current state of the code and its documentation, any effort to resolve such problems would require time and efforts beyond the scope of the present siting study. Other alternate ways of obtaining the desired results are currently under consideration.

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