

Originally Processed With FOIA(s):
2005-0336-F

FOIA Number:
2005-0336-F

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OA/ID Number: 62044
Folder ID Number: 62044-020

Folder Title:
Nuclear Reactor [1992]

Stack:	Row:	Section:	Shelf:	Position:
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"Document Control"

TYPE: Information

DOCUMENT NUMBER: 9202899

ORIGINATOR: 03

STATUS

DIRECTORATE STATUS C

FROM: AGNEW, Harold

TO: DAB

DATE OF
CORRESPONDENCE: 06/26/92

SUBJECT: Rebuttal to NRC recent report.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

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DATE COMPLETED/DEPT: 07/01/92

COPIES TO: Karl Erb

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OSTP RECEIVED:
FILE: NUCLEAR ENERGY--HTGR

DEPT RECEIVED: 07/01/92

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01. Letter	To: Allan Bromley From: Harold Agnew Re: NRC report (1 pp.)	6/26/92	(b)(1)	

Collection:

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WHORM Cat.:
File Location: Nuclear Reactor [1992]

Date Closed:	3/30/2010	OA/ID Number:	62044-020
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
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**Comments on National Research Council (NRC) Report
"Nuclear Power: Technical and Institutional Options for the Future"**

In mid-1989 a National Research Council (NRC) Committee assembled information on and undertook an assessment of the nuclear power option. However, due to the extended delays in the preparation and publication of the Committee report many of the conclusions and recommendations in the report appear outdated and inappropriate in that they do not reflect significant developments in the recent years. In the case of the Modular High Temperature Gas-Cooled Reactor (MHTGR), the report's comments on the technical status of the MHTGR and its market potential in the U.S. do not reflect:

- A study by the Electric Power Research Institute (EPRI) completed January 1991 (NP-7135) which concluded that "current MHTGR conceptual design is a viable nuclear option for the power industry for the coming century and deserves continuing development. This endorsement is consistent with recent assessments provided by the utility industry. The passively safe response to MHTGR of off-normal events accomplishes safety functions without reliance on either operator action or backup ac power. . ."
- A letter from 22 U.S. utility executives to Admiral Watkins dated June 20, 1991 which states: "The purpose of this Joint Letter is to reiterate broad utility support for the MHTGR as an attractive, follow-on option to the ALWR . . . Fundamental to the MHTGR being an attractive option are its inherent and passive safety features which offer the potential of eased licensing and siting, simplified operations and maintenance, plus overall improved public and investor acceptance."
- A study by the utilities' Advanced Reactor Corporation submitted to DOE in September, 1991 which states in its conclusions: "A substantive R&D program should be supported to prove the characteristics of the commercial MHTGR confirm its passive safety features and establish its economic potential."
- A National Academy of Science report that suggested the importance of small modularized reactors for reducing reliance on hydrocarbons.
- A planned change in power level per module from 350 MWth to 450 MWth, which significantly reduces MHTGR energy cost and enhances MHTGR marketability while maintaining all passive inherent safety features. The committee elected not to evaluate this design.
- The substantial advancement in the technical status of the MHTGR and verification of its performance potential resulting from the design and development undertaken as a part of DOE's New Production Reactor program since late 1989.

The report is also out-of-date with recent government policy actions and priorities.

- DOE's National Energy Strategy, formulated after extensive interaction between DOE, the general public and the nuclear industry includes the MHTGR as part of the nation's future energy supply for reasons not addressed in the NRC report.
- The Senate and House version of the long awaited National Energy Bill both contain provisions for focused Advanced Reactor R&D Programs. The DOE is directed to recommend a prototype demonstration of the MHTGR and/or the ALMR in a timely manner. These energy bills recognize the importance of advanced reactors for developing nuclear energy's full potential and avoiding over-reliance on a single technology.

The report also disregards major benefits of potential future applications of the MHTGR design such as high temperature process heat and the promise of very high efficiency power generation. Further, the general recognition by the Nuclear Regulatory Commission and others of the potential of the MHTGR to provide substantially increased safety margins was not accepted.

The Committee focused its evaluation on the US nuclear power market. If the study would have included a prospective lead role for the US in addressing the power needs of the world market where 80% of energy growth is projected and where the need for small, simple supersafe reactors is paramount, there would likely have been different conclusions.

Although the report intended to recommend prerequisites for preserving the nuclear option in the U.S., it appears to be recommending the preservation of the status quo in the nuclear industry. For the U.S. to retain nuclear power as an option, aggressive government funding of new safer alternatives such as the MHTGR deserve increased priority.