

**GA-A23811
(09/02)**

GT-MHR COMMERCIALIZATION STUDY

Technical Progress and Cost Management Report for the Period
September 1 through September 30, 2002

by
GT-MHR Staff

Contact: A. S. Shenoy

Prepared under
Oakland Operations Office
Program DE-AC03-01SF22343
for the U.S. Department of Energy

General Atomics Project No. 30103
DATE PUBLISHED: October 2002

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**GT-MHR Commercialization Study
Monthly Technical Progress and Cost Management Report
for September 2002**

Contract No. DE-AC03-01SF22343
Submitted to: DOE - Oakland Operations Office
By: General Atomics

PART 1 – Technical Progress

Summary

- Tentative permission has been received from Petten to ship the seven compacts tested in TRIGA (with slight, nearly undetectable activation) along with eight non-activated compacts to Petten for irradiation in the HFR-EU2 test. Shipping arrangements are being finalized.
- GA personnel reviewed and commented on drafts of the Advanced Gas Reactor Fuel Development and Qualification Plan and assisted in making modifications to the document to resolve comments.

Task 1 – Fuel Irradiation

Petten Authorities have provided tentative permission to ship the seven MHR-1 compacts tested for absence of as-manufactured defects in TRIGA (total quantity available) along with eight compacts not tested in TRIGA to Petten for irradiation in the HFR-EU2 test. The seven compacts tested in TRIGA have some slight, nearly undetectable activity. We are waiting for the return of the Petten rig assembly person to Petten, expected on Oct. 28, who needs to agree that the Joint Research Center can handle the activated compacts at the Petten workshop.

We have determined that the 15 compacts + 20 grams of loose particles (total of U-235 = 6.43 gms) can be shipped under 49CFR173.421. A recommendation of a Dutch transport company has been received for moving the shipment from the Amsterdam airport to the Petten site. We are working with this firm to arrange for the transport. The Dutch shipping papers (Arbeidsinspectie) were completed and sent to Petten. This form lists 20 items that must be supplied with the shipment; e.g., what is being shipped, to where it is being shipped, the quantity and type of material, the route, the transportation index, the type of package, the insurance company, the Custom House involved, etc. We have received the Petten Nuclear Material License number for our records and this shipment.

Task 2 – Fuel Manufacturing Process Improvement

This task has been completed.

Task 3 – NRC Interaction

This task is not currently funded.

Task 4 – Plant Cost Evaluation

This task has been completed.

Task 5 – Waste Disposal Assessment

This task has been completed.

Task 6 – Final Report and Recommendations for Further Development Activities

This task covers all of the commercialization study project management and project development activities. During September, routine reviews of project activities were performed and the monthly report for August was prepared.

Task 7 – DOE Fuel Plan

In September, GA personnel reviewed and commented on drafts of the Advanced Gas Reactor Fuel Development and Qualification Plan. GA personnel also reviewed DOE comments on the Plan and assisted in making modifications to the document to address these comments.

The period of performance for this task ended on September 30. GA spent approximately \$108K vs. the budget of \$93K. The reason for the cost overrun is that the level of effort required to support preparation of the working group deliverables and the fuel program plan was somewhat higher than originally estimated, including the participation of Bill Scheffel (per ORNL/INEEL request) in the Safety Testing and PIE working group, which was not originally planned.

GA's deliverables under this task included the following:

- Provided input to each of the three deliverables submitted by each of the working groups. GA's contributions to the Fuel Supply Group and Fission Product Transport and Source Term Group deliverables were particularly extensive. (J. Saurwein served as the lead for the Fuel Supply Working Group)

- 5 GA engineers attended the August 13, 14 meeting at ORNL (per ORNL/INEEL request)
- Authored the final version of Section 3.1 and Appendix A of the draft Fuel Plan
- Contributed to the completion of a number of action items from the August 13, 14 meeting
- Assisted in drafting changes to the draft Fuel Plan to address DOE comments

GA's activities significantly contributed to the draft Fuel Plan. ORNL/INEEL would like GA to further participate in (1) finalizing the Fuel Plan and (2) developing priorities and detailed work scope for FY03 tasks. Additional funding will be requested to cover the expenditures to-date and the additional work desired.

Task 8 – MHR-2 Fuel Specification

Work on this task has not been started.

Part 2 - Cost Management

Item	Total Expenditures, K\$	
	September 2002	Inception to Date ¹ , Totals
Task 1 – MHR-1 Fuel Irradiation	6.1	63.8
Task 2 – Fuel Manufacturing Process Improvement	(0.1)	203.3
Task 3 – NRC Interaction	(0.9)	142.8
Task 4 – Plant Cost Evaluation	(0.5)	86.8
Task 5 – Waste Disposal Assessment	0.0	102.9
Task 6 – Final Report and Recommendations	0.2	124.3
Task 7 – DOE Fuel Plan	7.5	108.4
Task 8 – MHR-2 Fuel Specification	0.0	0.0
Totals	12.3	832.3

Note:

1. Work started June 18, 2001.