DEVELOPMENT OF ODS HEAT EXCHANGER TUBING

Quarterly Technical Progress Report

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Mark A. Harper, Ph.D.
Principal Investigator

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Huntington Alloys
3200 Riverside Drive
Huntington, WV 25705

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ABSTRACT

The Vision 21 project titled “Development of ODS Heat Exchanger Tubing” has been initiated. A project kick-off meeting was held in Huntington, WV, the MA956 powder that will be used in the extrusion campaign has been obtained, and some of the MA956 tubing and rod required for joining trials has been shipped to the appropriate subcontractors. Acquisition of the MA956 alloy powder will allow the extrusion campaign to begin during the month of February. Also, tubing shipped to Edison Welding Institute and rod shipped to Michigan Technological University will allow joining trials to begin. In addition to these technical aspects, negotiations with all the subcontractors have been completed and the Project Management Plan and Project Work Plan have been prepared and submitted for approval.

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INTRODUCTION

This research will seek to develop a MA956 heat exchanger tube which will lead to the design and fabrication of a MA956 full-scale tube heat exchanger composed of the referenced alloy. The necessary steps required for the commercial production of such a tube are: (a) produce a MA956 tube with a significant increase in circumferential strength compared to currently available material; (b) develop the welding technology required to produce a cost-effective joint between an ODS tube and an ODS tube and a joint between an ODS tube and a heat resistant alloy; (c) determine the critical strain the MA956 material can withstand during tube bending and not undergo recrystallization during subsequent operation; (d) characterize the MA956 alloy in environments likely to be encountered on the inner diameter of the tube (working fluid side) and the outer diameter of the tube (fireside); (e) generate data to be used by heat exchanger designers and the ASME BPV Code; (f) analyze the data for the purpose of setting limits on the design of a MA956 heat exchanger.

The members of the team that will conduct this research are: Huntington Alloys (HA), Foster Wheeler Development Corporation (FWDC), Oak Ridge National Laboratory (ORNL), University of California, San Diego (UCSD), Michigan Technological University (MTU), and the Edison Welding Institute (EWI).

EXPERIMENTAL

No experimental work has been performed at this time.

RESULTS AND DISCUSSION

The Vision 21 project titled “Development of ODS Heat Exchanger Tubing” has been initiated. A project kick-off meeting was held in Huntington, WV, the MA956 powder that will be used in the extrusion campaign has been obtained, and some of the MA956 tubing and rod required for joining trials has been shipped to the appropriate subcontractor. Acquisition of the MA956 alloy powder will allow the extrusion campaign to begin during the month of February. Also, tubing shipped to Edison Welding Institute and rod shipped to Michigan Technological University will allow joining trials to begin. In addition to these technical aspects, negotiations with all the subcontractors has been completed and the Project Management Plan and Project Work Plan have been prepared and submitted for approval.

CONCLUSIONS

There are no conclusions at this time.

REFERENCES

There are no references for this report.