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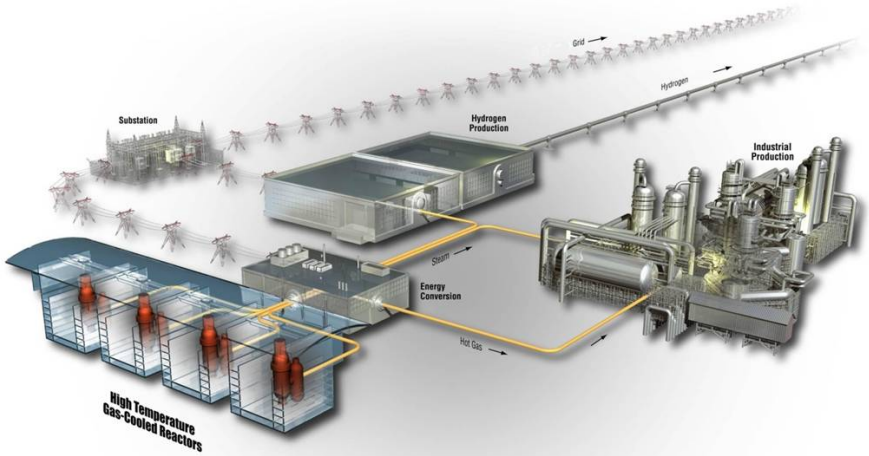
Statement of Work

Project No(s): 29412, 23841

INL ART AGR-5/6/7 PIE at Oak Ridge National Laboratory



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SIGNATURES

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P For Preparer of the document.

A For Approval: This is for non-owner approvals that may be required as directed by a given program or project.

C For documented review and concurrence.

Note Quality Level 3 (QL3)

REVISION LOG

Rev.	Date	Affected Pages	Revision Description
0	10/09/2015	All	New issue
1	03/10/2016	5-7	Includes editorial changes and deletion of reference to Sec. 2.7 of NQA-1 2008, 1a 2009
2	10/24/2016	5	Updated applicable codes and references
3	11/06/2017	All	Updated
4	09/27/2018	All	Updated to include FY-19 workscope

CONTENTS

1. INTRODUCTION

1.1 Background

Idaho National Laboratory (INL) Advanced Reactor Technologies (ART) is currently supporting a tristructural isotropic (TRISO) fuel development and qualification program, which includes fuel fabrication, test irradiations, and post-irradiation examination (PIE) and safety testing to assess fuel performance during normal irradiation and under potential accident conditions. PIE fuel work from the final test irradiation (Advanced Gas Reactor [AGR]-5/6/7) is expected to commence at INL in early 2021, but the PIE preparations work began in FY2016. The work scope in this statement of work includes Oak Ridge National Laboratory (ORNL) providing: project management and technical support to PIE-related activities; technical input to the moisture/air-ingress furnace design, fabrication, and equipment qualification; and technical support for development of equipment and techniques for planned PIE evolutions.

1.2 Purpose/Objectives

The AGR-5/6/7 PIE work at ORNL identified includes:

A. Providing project management, technical support, planning, and reporting.

B. Providing technical input to the moisture/air-ingress furnace design, fabrication, and equipment qualification.

C. Providing technical support for development of equipment and techniques for planned PIE evolutions.

1.3 Anticipated Benefits

The primary objective of this work scope is to (1) establish the basic structure to manage the planned AGR-5/6/7 PIE work scope that began at ORNL in FY2016 and will continue through the conclusion of PIE; (2) provide support for the design, fabrication, and equipment qualification of the moisture/air-ingress furnace; and (3) provide technical expertise that will support the development of the needed PIE equipment for the various phases of PIE.

2. APPLICABLE CODES AND REFERENCES

ASME NQA-1 2008/1a 2009, “Quality Assurance Requirements for Nuclear Facility Applications,” Part I, American Society of Mechanical Engineers, 2008 and 2009.

PLN-2690, Revision 18, August 201, “INL ART Quality Assurance Program Plan”.

PLN-3636, Revision 7, June 2018, “Technical Program Plan for INL ART Advanced Gas Reactor Fuel Development and Qualification Program”.

3. SCOPE

3.1 Work to Be Performed

3.1.1 Perform Oversight and Technical Support

ORNL will support the INL ART TRISO Fuels AGR-5/6/7 PIE effort by providing technical input, analysis, and expertise; evaluating new PIE methods

and preparing evaluation reports as needed; performing PIE work scope as identified below; and participating in PIE activities as requested. This work scope includes the general oversight of ORNL PIE activities identified below, reporting on a bi-weekly and monthly basis as requested, and attending technical program meetings to present and discuss PIE data.

3.1.2 Provide Moisture Furnace Design Support

ORNL will provide technical expertise support for the design, fabrication, and equipment qualification testing of the moisture/air-ingress furnace.

3.1.3 Provide Technical Expertise and Support for PIE Equipment Development

ORNL will work with INL PIE staff in the development of various pieces of equipment that will be required to complete PIE activities planned for the AGR-5/6/7 experiment.

3.2 Work Excluded

All other work scope not specifically related to AGR-5/6/7 PIE is excluded from this statement of work.

3.3 Requirements

3.3.1 Environmental

Work will be performed in accordance with applicable ORNL environmental requirements.

3.3.2 Safety and Health

Work will be performed in accordance with applicable ORNL safety and health requirements.

3.3.3 Quality Assurance

ORNL will perform this work in accordance with its approved quality assurance program in compliance with NQA-1 2008/1a 2009 criteria. INL ART Quality Assurance may elect to perform work inspections of selected processes. The INL and ORNL technical leads will identify the selected processes for inspection. INL will supply the inspection checklist to ORNL approximately three weeks prior to the inspection.

3.4 Place of Performance

Work will be performed at ORNL by ORNL staff. The respective ORNL and INL technical leads will coordinate other work locations if necessary.

3.5 Interfaces

Interfaces will be between INL and ORNL technical representatives.

3.6 Miscellaneous

Preparations of presentations and reports, and travel will be included within this work scope to share information. This is expected and will be charged to the appropriate activity being supported.

4. DELIVERABLES

Activity Description	Completion Date	Deliverable	Associated INL Milestone
ORNL will provide routine updates on progress made	As needed	Input on progress to INL ART technical reports as needed	None

ORNL will provide input to INL for ART technical progress reports as needed and participate in bi-monthly AGR program teleconferences to discuss the latest progress and report any issues.

5. SCHEDULE AND MILESTONES

There are no specific deliverables or objectives that will result from the currently identified and planned work scope so no schedule or milestones are needed at this time.

6. COMPLETION CRITERIA AND FINAL ACCEPTANCE

There are no specific deliverables or objectives that will result from the currently identified and planned work scope so no completion or acceptance criteria are needed at this time.

7. APPENDICES

None

8. ATTACHMENTS

None