

PIP-II Half Wave Resonator Cryomodule Transportation Readiness Review Charge

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Document Approval

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Approvals managed via Fermilab Teamcenter Workflows.

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Revision History

Revision	Date Release	Originator: Role:	Description of Change
1	2018-06-26	J. Holzbauer	Initial Release

Revision control is managed via Fermilab Teamcenter Workflows.

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1. Introduction

The PIP-II Project calls for a single cryomodule of eight Half Wave Resonators at 162.5 MHz. This cryomodule has been designed and is in an advanced stage of production by the Physics Division at Argonne National Laboratory. The current schedule calls for delivery in early 2019. This Transportation Readiness Review has been called to:

- Assess the current shipping system design and implementation
- Determine if current designs/plans are adequate to transport HWR cryomodule successfully
- Recommend additional calculations/designs/planning to improve transportation

2. Review Agenda

HWR TRR Review Agenda

Location: Hermitage – ICB

Date: 2018-07-24

Time: 8:00-12:00

Indico Site: <http://indico.fnal.gov/e/HWRTRR>

Participants:

Joe Ozelis Ozelis@fnal.gov	FNAL - TD	Role: Coordinator
Zach Conway Zconway@anl.gov	ANL - PD	Role : Presenter
Jeremiah Holzbauer Jeremiah@fnal.gov	FNAL - PIP-II	Role: Chair
Brian Hartsell Hartsell@fnal.gov	FNAL - AD	Role: Reviewer
Josh Kaluzny Kaluzny@fnal.gov	FNAL - TD	Role: Reviewer
Jerry Leibfritz Leibfritz@fnal.gov	FNAL - AD	Role: Reviewer
Rich Stanek	FNAL - Dir	Role: Reviewer

Location: Hermitage – ICB

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Curt Baffes baffes@fnal.gov	FNAL - AD	Role: Presenter
Jake Kilbane Jkilbane@anl.gov	ANL - PD	Role: Presenter

Agenda details:

- I. Introduction/Charge Review: Ozelis
 - a. Short introduction of the presenters/reviewers, system overview
 - b. Review of the charge in relationship to the presentations
- II. Overview of HWR Cryomodule Design: Transport-Critical Components: Conway
 - a. Overview of HWR cryomodule design, with specific attention to transport-critical components and systems
- III. ANL HWR Cryomodule Shipping Plan: Kilbane
 - a. Review of the existing cryomodule transportation plan
- IV. Experience and Plan for Cryomodule Handling/Acceptance: Conway/Baffes
 - a. Review of cryomodule handling experience at both ANL and FNAL
 - b. Plans/tooling for HWR cryomodule loading/unloading
- V. Organizational/Schedule Overview: Ozelis
 - a. Roles and responsibilities involved in transportation effort
 - b. Cost and schedule review for cryomodule delivery
- VI. Closeout – Review Chair
 - a. Summary Statement
 - b. Preliminary Findings
 - c. Preliminary Comments
 - d. Preliminary Recommendations

3. Review Charge Statement

This review committee is charged with reviewing the transportation plans of the ANL HWR cryomodule with the goal being to achieve a successful transportation from ANL to FNAL. Specific tasks related to this include:

- Review provided drawings, designs, procedures, and plans for cryomodule lifting/mounting/transportation
- Assess the shipping system design and implementation
 - Evaluate whether the existing transportation plan adequately protects equipment from damage
 - Determine if transportation/delivery risks are well understood
 - Limits of sensitive internal mechanical components
 - Critical stages (lifts, route issues)
 - Review relevant previous transportation experience at ANL and FNAL and recommend how to incorporate this experience
 - Determine effects of winter temperatures/conditions on transport
- Determine that the transportation plans will conform to relevant laws and safety regulations
- Determine if staffing level is adequate
- Determine if monitoring/verification plan is adequate to verify successful transport
- Determine if the proposed transportation configuration is suitable for later on-site transportation of the HWR cryomodule at FNAL from PIP2IT to storage/linac installation
- Recommend additional calculations/designs/planning to reduce transportation risk

4. Acronyms

List and define any relevant acronyms as necessary.

HWR	Half Wave Resonator
ANL	Argonne National Laboratory

5. Reference Documents

List any relevant documents referred to in the Review Charge Statement. Include reference links or locations where the references are found. This list should include all documents with which the review committee should be familiar prior to the review.

1	PIP-II Project Review Plan (TBD)
2	
3	
4	