

LINAC Commissioning Task Force

July 12, 2011

ARR Program Requirements

A. Ackerman

Outline

- Maybe 15 to 20 individual procedures needed for 'Readiness'
- Requirements lists in the 'Commissioning Plan' are good
- Readiness borrows much from NSLS
- Much advantage from 'turnkey' system: specifications & documentation
- Can organize by 'systems' and 'operations'
- We have adequate time, **BUT** work in July should progress with writing of the following procedures where possible:
 - Instrument Readiness Review Ackerman
 - Un-Reviewed Safety Ackerman
 - LINAC Commissioning sequence with critical steps defined Fliller
 - Radiation fault study sequence with critical steps defined Casey
 - Interlock verification checklist Buda
 - Interlock search and secure Buda
 - Routine radiation monitoring Casey
 - Vacuum ???

From commissioning plan

Commissioning and Operations Modules

1. All related I/ERR items are closed out (R. Filler)
2. All related ARR items are closed out (A. Ackerman)
3. The Personnel Protection System is operational (S. Buda)
4. The Area Monitoring System is operational (B. Casey)
5. Emergency procedures are complete (B. Chmiel).
6. Operations procedures are complete (M. Buckley)
7. A commissioning sequence is complete (R. Filler)
8. Fault Study Plan prepared (R. Filler)
9. Supplemental Shielding is installed & configuration control is established (A. Ackerman)
10. LESH Review Committee issues closed out (N. Gmur)
11. Sweep procedures are complete (A. Ackerman)
12. Training records of commissioning staff are complete (M. Corwin)

All Needed None Completed

From Commissioning plan

List of Commissioning Procedures Required for Commissioning Readiness

- | | | |
|-----|--|---------------------------|
| 1. | LockOut TagOut Procedures | (A. Ackerman) |
| 2. | Local Emergency Procedure | (B. Chmiel) |
| 3. | Emergency Call Down Lists | (R. Filler) |
| 4. | Interlock Procedures | (S. Buda) |
| 5. | Radiation Monitor Calibration Procedure | (B. Casey) |
| 6. | Shielding Configuration Control Program | (A. Ackerman) |
| 7. | Response to elevated radiation levels and alarms | (S. Hoey or designee) |
| 8. | Operator response to ICT interlock | (R. Filler or designee) |
| 9. | Requirements for operation with 3 klystrons | (R. Filler or designee) |
| 10. | Requirements for operating at pulse rates > 1 Hz | (R. Filler or designee) |
| 11. | Linac Commissioning Sequence
including Radiological Survey Points | (R. Filler and Bob Casey) |

All Needed None Completed

Systems

Interlocks; Vacuum; Electrical Power; Radiation Monitoring; Shielding; Water; Diagnostics; Magnet; RF.

- Design schematics
- Approvals (design & inspected)
- Program description
 - Tracking / Identification
 - Verification procedure / Checklist
 - Configuration control
 - Document retention scheme
 - Personnel assignments

With this much information
for each system,

we would be ready

Operations

Routine; Emergency.
Staffing; Planning; Qualification; Authorization.

- Approvals
- Procedures
- Change control
- Organization description
 - Resource summary
 - Position assignment

Interlocks

Much is completed

- Update existing program
 - File approvals
 - 2 documents to write
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- Program description: reference [NSLS PRM](#):
 - Electrical schematics: location, approvals (design, inspected)
 - Six month verification; tracked in existing [NSLS interlock testing database](#)
 - NSLS [permit system for configuration control](#)
 - Verification checklist document: **Needed**
 - Search and secure document: **Needed**
 - ID program personnel responsibilities
 - Design / Maintenance / Document: Buda
 - Testing: Chmiel
 - Ensure that requirements are implemented: Filler

Planning

- Process description: NSLS Work Planning PRM; Committee assignment
- Specific approved documents:
 - Final commissioning plan: **Completed**
 - Commissioning sequence with critical steps defined: **Needed**
 - Radiation fault study sequence with critical steps defined: **Needed**
- Written plans define personnel assignments
- ‘Critical Steps’ can be parameter limits, data collection and analysis requirements, calibrations, approval requirements

Operations

This will be the biggest one

Instrument Readiness Review Procedure Format

Prepared By: A. Ackerman	Approved By: S. Hoey	Approved By: E. Johnson
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*Approval signatures on file with master copy.

1 PURPOSE/SCOPE
This Instrument Readiness Review (IRR) procedure defines a comprehensive internal review process to assure management that an instrument has been designed, constructed, and installed compliant with code requirements, good practice consensus standards, and as per specifications and drawings.

2 RESPONSIBILITIES

2.1 IRR committee chairperson:

- Assess proposals to determine review requirements.
- Schedule and document meetings.
- Approve readiness for instrument commissioning or operation.

2.2 IRR committee members

- Provide expertise and assistance in preparing an instrument to be ready for commissioning or operation.

2.3 Instrument scientist/engineer

- Prepare instrument readiness proposals.
- Provide required documentation.
- Respond to IRR committee requirements.

2.4 Mechanical designer IRR committee member

- If applicable, analyze the Bremsstrahlung ray traces and report findings to the full committee.

3 DEFINITIONS

3.1 Instrument: ???

4 PREREQUISITES
Not Applicable

5 PRECAUTIONS
Not Applicable

Schedule

- Jim Floyd, ARR Chairman, visits on: August 29
- Full team 'On-site' visit:
(between installation and begin commissioning) November
- Document drafts circulated for approval: August 1
- Approved documents on the web: August 31
- Monthly conference call with team: Mid: Sep; Oct; Nov