

TO: M. Cole
FROM: P. L. Goranson

SUBJECT: Job 1270 - NCSX Heater Control System Closeout Summary
08July-08-PG

Scope

This effort covers all Title I, II, and III engineering design for a resistance heating temperature control system to maintain the NCSX inner port extension wall temperatures during standby and bake out operation. It includes monitoring of temperatures of the Vacuum Vessel body and the port extensions during standby and bake out operation. It includes transmission of temperature data to Central I & C for archival and interface to other disciplines.

Work includes engineering design, procurement, fabrication, and installation of leads, thermocouple signal conditioners, processors, heater controllers, racks, wire trays, and associated support hardware. Thermocouples and heater tapes are supplied by WBS 12

Status

At the time of closeout no work was in process.

Interfaces

Vacuum Vessel (12)
Cryostat (WBS 17)

Specifications

No work had begun on a system requirements document or CSPEC.

All work to date was included in the SC Project Review of NCSX, April 8-10, 2008 and a presentation by Gernhardt entitled "NCSX Heater and Thermocouple-Instrumentation and Control", updated 10/25/07. (Both Attached).

Schematics

None except in documents listed above.

Models Completed

None required.

Drawings

None started.

Analyses

None required.

Testing

None required. MDL incorporated the design in one of its heating systems for a furnace with good results.

Costs

Cost estimates were updated on the latest WAF and were included in the 08 Lehmann review presentation.

Remaining Work

- The routing of wire trays.
- Locating equipment.
- Drawings and schematics.

R&D was not required.

Conclusion

The work was in a preliminary phase.

Attachments: