Procedure 03-8083-P15

Procedure for Non-Inert Stress Relief

REVISION RECORD

Revision	Date of Issue	Description of Change	Prepared by	Reviewed by	Approved by
0	03/29/04	New	Tom Gilmore	Gary Armstrong	David Rioux

STRESS RELIEF

1.0 Purpose:

To establish the method for Non Inert Gas Stress Relief of the Prototype Vacuum Vessel Segment for the National Compact Stellarator Experiment.

2.0 Scope:

The Prototype shall be placed in a controlled environment and a Stress Relief cycle applied. This procedure is specific to the Prototype Vacuum Vessel Segment for the National Compact Stellarator Experiment only.

3.0 References:

- National Compact Stellarator Experiment (NCSX) Specification NCSX-CSPEC-121-01-01.

4.0 Equipment:

- Electric Car type furnace
- Type K Thermocouples
- Plotting style data recorder

5.0 Procedure:

1. Prior to heat treatment, ensure that furnace, die, and segment are free and clean of any oils, greases or any other chemicals.
2. Place Die with 3/8” inconel formed segment enclosed in die on furnace car.
3. Weld thermocouples in place, attaching one at each end of the die directly to the die.
4. Roll car into furnace and close door.
5. Turn on furnace, once furnace reaches 800 Deg. F ramp temperature at 100 Deg. F / hr.
6. Soaking temperature is to be 1600 Deg. F +/- 25 Deg. F
7. Let soak for 3 hours minimum.
8. After soaking time complete, furnace door should be opened half way and die should be cooled in still air.
9. Once part temperature has dropped below 400 Deg. F, remove from furnace and package die for shipping to PMW.