

Emergent Issue Summary
Safety Injection Pump 2-1 Replacement Flanges Incorrect Material Type

Updates in Red

| Revision Time/Date | SAP Notification |
|-----------------------------|-------------------------------|
| 17:00 05/08/13 | SAPN 50561134 / 50561136 |
| Emergent Issue Owner - Days | Emergent Issue Owner - Nights |
| Scott Brasfield | Lance Hopson |

Problem Statement:

During SI Pump 2-1 MOW on 05/08/2013, existing flanges were removed from the pump as planned, then it was discovered that the replacement flanges were the wrong material type and could not be used.

Operational Impact:

SI Pump 2-1 is cleared out of service. Tech Spec 3.5.2-A.1 for SIP 2-1 MOW is due 05/11/13 ~0400, or unit 2 will be shutdown.

Shift Manager is working with Regulatory Services to extend from a 72 hour shutdown action to a 14 day shutdown action.

Investigation Results to Date (known facts):

1. Flanges were identified in past MOW as not having a record finish on their raised face sealing surfaces and could not be corrected in place. The plan was to replace them in this Maintenance Outage Window.
2. During planning no vendor drawing notes were found detailing the flange material type. The pump and flanges were painted yellow and the material was magnetic and an assumption was made the material was carbon steel.
3. After removal of existing flanges it was identified that they were not carbon steel and were stamped SA-182 F410. This existing material type is martensitic stainless steel. The replacement flanges are carbon steel SA-105.
4. Material type SA-182 F410 is equivalent SA-182 Grade-F6A
5. There is a spare pump in the warehouse that has been verified by trace number to have the correct SA183 F410 material type flanges installed. They can be cut off and used as replacement material on the SI Pump 2-1.
6. The flanges that were removed from the SI Pump 2-1 area degraded but could be repair welded and machined in 24-36 hours.

7. Procurement is purchasing new flanges of the correct material type with an estimated time of arrival 05/10/02:00.
8. If any of this material is greater than 0.08 carbon content then our welding procedures require post weld heat treated prior to placing it back in service. We do not have post weld heat treating equipment on site and would have to get it from Applied Technical Services (ATS) in San Ramon.
9. Carbon content of spare is 0.13
10. Carbon content of Procurement flanges is 0.14
11. Carbon content of SI Pump removed flanges is Unknown
12. Attachment piping carbon content is unknown

Potential Causes (and evidence supporting or refuting)

Human performance error in the planning and material research for this work.

Operating Experience (industry and DCPD):

None at this time

Recommended Resolution/Corrective Actions (consider parallel path solutions)

1. Remove the flanges from the spare pump, machine them as needed and install them on SI Pump 2-1.
2. Procure new flanges and install them on SI Pump 2-1.
3. Repair old removed flanges and re-install them on SI Pump 2-1
4. Perform post weld heat treating with equipment acquired from ATS in San Ramon.
5. Evaluate post weld heat treatment requirements for potential relief

Extent of Condition (E.O.C.) Considerations (both units):

This condition is limited to SI Pump 2-1

Decision making process (RRB, ODM, RFR, OCC, PSRC etc)

An OCC will be established for decision making

HU Determination (If potentially caused by human performance, list the department level event criteria under consideration (per OM7.ID7 attachment 3) or station level event criteria (per OM7.ID7 attachment 5).

Actions Taken or Recommended to Determine E.O.C.

None

Action Items

| Action number | Description | Owner | ECD |
|---------------|-------------|-------|-----|
|---------------|-------------|-------|-----|