Coded Note Number: LI113
Revision: **C013**
Date: **May 20, 2016**
Title: STR-4P38 Steam Plant Detrimental Material Controls

This revision history is provided for convenience and does not alleviate the supplier's responsibility with understanding and complying with the full coded note.
Bolded font indicates changed/added content.
[*Text deleted*] inserted in the document indicates the removal of content

NOTE: When EB Standard Clause 12-41 and this coded note are both specified in a purchase order, this coded note takes precedence.

If the seller is unable to comply with the requirements of this coded note or has questions concerning its content, the following should be submitted to NPMO@HII-NNS.COM for further instructions: Manufacture's Name, Product Name and Description, Lot Number(s), and specific question or issue.

1. Quantity: One (1) Copy – STR4P38 Certificate of Compliance – An STR-4P38 certificate of compliance shall be provided. The certificate shall itemize all piece parts which meet the applicability paragraph 2 below. The certificate shall state for each item:
   a. that it has been tested to meet the requirements of Table 1 below, or
   b. that it is composed solely of one or more of the materials listed in Table 2 below, or
   c. that it has been manufactured per one or more of the requirements listed in Table 3 below, or
   d. that it meets the requirements of item 5 below or
   e. "No solid non-metallic items contained on or in this item that contact system fluids."

2. Applicability: This coded note only applies to non-metallic parts which contact system fluid. This includes o-rings, packing, elastomers, plastics, sealing compounds, lubricants, locking compounds, adhesives, etc.

3. Deficiencies: If any materials are found which do not comply with this coded note, then a VIR shall be submitted to HII-NNS for resolution. The VIR must include sufficient information to establish the manufacturer and product number of each material which does not comply.

4. Packaging Identification: Hardware or piece-part packaging shall include a suitable marking, sticker, or tag which indicates the material is STR-4P38 compliant. The marking may state one or more of the following:
   a. A statement that the item or part is STR-4P38 compliant
   b. A statement or indication that the item was manufactured to one or more of the standards listed in Table 3 below

5. O-Rings: In addition to the requirements listed above, o-rings shall not contain sulfer or halogens in their chemical structure. For example, fluorocarbon (e.g.Viton) or chlorocarbon (e.g. Chloroprene/Neoprene) rubber shall not be used. O-rings are not required to be **STR-4P38 detrimentally** tested.

6. Exudate Test Requirement: For non-silicon rubber and non-o-ring products, greater than 0.250 inches thick, exudates testing is required if the item is compressed in the intended use. Contact HII-NNS for further information.

<u>Table 1 – Chemical Testing Requirements: Constituents (Max Concentration)</u>
Halogens - Total of Chloride, Fluoride, and Bromide (750 ppm)
Sulfur (1000 ppm)
Lead (250 ppm)

Non-metallics shall be chemically analyzed and shown to contain no more than the quantities shown in the table above. The analysis shall be per the requirements of Appendix A of STR-4P38. For further information please contact HII-NNS.

<u>Table 2 – Acceptable Material Exempt from Chemical Analysis</u>
Polyethylene
Polypropylene
Polyisocyanate-Polyether or Polyester
Polytetrafluoroethylene (Teflon)
Polyamide (Nylon)
Silicone Rubber
Ethylene Propylene Rubber (EPR, EPM, or EPDM)
Polysiloxane (Silicone)
Polyarimid (Kevlar)
Polycarbonate (Lexan)
Delrin
Polyetheretherketone(PEEK), provided no fluorocarbons are added to the formulation
Polyurethane
Derakane (Dow Chemical 470-36 styrene and vinyl ester epoxy)
Silicon carbide
Tungsten carbide
Acrylonitrile Butadiene (Buna-N) O-rings
***Acrylonitrile Butadiene (Buna-N) Gaskets require detrimental testing.**

<u>Table 3 – Acceptable Specifications Exempt from Further Analysis</u>
MIL-P-24503, Class 2 (Packing Material, Graphitic, Corrugated Ribbon)
MIL-P-24583, Class 2 (Packing Material, Graphitic or Carbon Braided Yarn)
MIL-G-24696 (Non-asbestos Gaskets)

MIL-G-24716 (Gaskets, Metallic-Flexible Graphite, Spiral Wound)
MIL-G-24740 (Metallic Rubber Gaskets)
MIL-PRF-24790 (Non-asbestos Pump Packing)
MIL-PRF-2863, Rev. C or later (Packing, Preformed, Condenser Tube, Non-Asbestos)
Turbine Exhaust Expansion Joint Specifications:
- NN Specification 2070-22 (S6G MPU)
- NN Specification 2070-26 (S6G SSTG)
- NN Specification 4122T-MOD25-26 (S6G SSTG)
- EB Specification 2548 (S8G)
- EB Specification 3328 (S6W)
- EB Specification 3968 (S9G)
Propulsion Plant RISIC Specifications:
- Oil States Industries Drawing 299945 (S6G)
- Murdock Engineering Co. Drawing 298365 (S6G/S8G)
- Murdock Engineering Co. Drawing 292900 (S8G)
- Oil States Industries Drawing 300154 (S8G)
- EB Specification 3543 (S6W/S9G)