

Items Needed to Complete the Acceptance Review of Doosan HF Controls Topical Reports

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing the HFC submittals dated September 2011 (RR901-002-01, Rev. A) and August 2012 (RR901-003-01, Rev. B) that propose to expand the scope of the approved HFC-6000 TR. The staff is currently performing an Acceptance Review to determine if the necessary information has been provided.

The staff has identified the following topics areas where information is needed:

1. Using Table 1 and Table 5 of RR901-002-01, Rev. A, and Table 1 of RR901-003-01, Rev. B, the NRC staff created a table which identifies 47 additional components (modules, terminal blocks, etc.). It is not clear if HFC is requesting NRC staff review for all 47 parts. The staff would like to clarify the following:
 - a. What equipment listed in the table is NOT part of the TR Amendment scope? Is HFC requesting NRC staff review of all the equipment listed?
 - b. For the equipment that HFC is requesting NRC staff review, is the table complete and accurate?
 - c. RR901-003-01, Rev. B, lists the following types of HFC-FPC08 Fast Performance Controller: C-Link (40103827Q), MTP (40103823Q), SDL (40103824Q). The staff needs to confirm if HFC is requesting NRC staff review of all three modules. If so, can either module be used for an application specific design, or should all three modules be used together?
 - d. What is the correct Module Number for part 40054282? In Table 1 of RR901-002-01, Rev. A, it is HFC-AI16RD, and in Table 5 of RR901-002-01, Rev. A, it is HFC-AC16RD.
 - e. What is the correct part number for TBDC34S? In Table 1 of RR901-002-01, Rev. A, it is 40065381 and in Table 5 of RR901-002-01, Rev. A, it is 40065391.
 - f. Table 1 of RR901-002-01, Rev. A, identifies that HFC-AI8LD (40083881) replaces HFC-AI8L (40043701). However, HFC-AI8L was not reviewed in the original SE (ML110831017). Is HFC requesting NRC staff review of both HFC-AI8LD and HFC-AI8L, or just HFC-AI8LD?
2. The staff has noticed that some HFC documents follow a distinct numbering format. For example: RR901-**002**-02, DS901-**000**-23, TP901-**200**-07, RR901-**003**-06, TP901-**301**-03. It would be helpful for the staff, as it navigates through all the documents, to understand the logic behind numbering such as -000-, -001-, -002-, -003-, -200-, and -301-. A summary of the document relationship will also be helpful to the staff.

3. Several modules are being added and others replaced with this TR amendment. Does HFC intend to:
 - a. Discontinue the use of the modules being replaced?
 - b. Be able to combine previously reviewed modules with the new modules? If this is the case, HFC needs to demonstrate that old modules are compatible and tested with the new modules.
 - c. []
4. Table 1 of the HFC-6000 SE (ML110831017) lists the firmware of the HFC-SBC06 (part number 40041701) controller's SYS, ICL, and C-Link microprocessors (SC Firmware: 9120905-13, SAP Firmware: 9120906-12, SEP Firmware: 9120907-12). Is the firmware for these microprocessors being changed in HFC-SBC06 (part number 40041786)?
5. HFC-DPM06 (part number 40042281) is being replaced with HFC-DPM06BP (part number 40089401).
 - a. []
 - b. []
6. When was the last time HFC was audited by a NUPIC member utility?
7. Are the new boards developed under an Appendix B program or did they undergo commercial grade dedication (CGD)? If they underwent CGD, please identify the Appendix B supplier who dedicated the equipment.
8. Regarding Equipment Qualification (EQ):
 - a. EQ Test Procedures are included in the September 2011 and August 2012 submittals, but not the Summary Test Reports. Are all modules for which NRC staff review is being requested, included in previously submitted Summary Test Reports? If so, please identify which reports.

- b. Test specimen ERD1192 is mentioned in RR901-003-01, Rev. B. What modules for which HFC is requesting NRC staff review are part of the ERD1192 test specimen?
 - c. Which test specimens contain the modules for which NRC staff review is being sought?
9. Figure 1 of the HFC-6000 SE (ML110831017) includes a Channel Gateway Controller which was out of the scope of the original TR. HFC-SCG06 (part number 40068983) is described as a Gateway Controller Card in Table 1 of RR901-002-01. Is HFC-SCG06 the Channel Gateway Controller in Figure 1 of the SE? If this is the case, is HFC requesting NRC staff review of the gateway controller?
10. Section 4.1 of RR901-002-01, Rev. A, 'Codes, Standards, Regulations and Guidance' states: "The accepted topical report, PP901-000-01, provides the conformance details of the HFC-6000 Safety Platform to these codes and standards. Since the enhancement process did not deviate from the conformance, the details of the conformance are not provided in this document."

Because different technology from that reviewed by the NRC staff in the HFC-6000 SE (ML110831017) is being used in the new components, the staff needs to verify the FPGA-based products and new components meet the applicable codes and standards. Therefore, information demonstrating conformance to these products/components to applicable codes and standards is essential in the NRC staff's review.