

RESOLUTION OF COMMENTS BY THE OFFICE OF NUCLEAR REACTOR REGULATION
ON DRAFT SAFETY EVALUATION FOR
TOPICAL REPORT HFC-6000 SAFETY SYSTEM
DOOSAN HF CONTROLS CORPORATION
PROJECT NO. 731

This Attachment provides the U.S. Nuclear Regulatory Commission (NRC) staff's review and disposition of the comments made by Doosan HF Controls (HFC) on the draft safety evaluation (SE) for Topical Report (TR) HFC-6000 Safety System. HFC provided its comments in a letter dated March 11, 2011, entitled "Comments to Draft Safety Evaluation for Doosan HF Controls Corporation Topical Report HFC-6000 Safety System" (Agencywide Documents and Management System Accession No. ML110760426).

No.	Draft SE Location	Suggested Change	NRC Resolution	NRC Disposition
1	Page 6, Figure 1	The red dashed-line box should extend to cover the other node and the safety C-Link in the figure.	Accepted	Changed per comment. The Figure caption now reads: "Safety System Architecture Example Based on HFC-6000 Platform [Note: Only the components contained within the dashed-line box are within the scope of the topical report evaluation. Intra-channel communications are included in the scope of this evaluation; however, inter-channel communications have not been reviewed, nor approved.]"
2	Page 6, Line 21	Remove "one node of"	Accepted	Editorial
3	Page 7, Lines 13-19	Remove "While the network interface for the HFC-6000 controller is an integral platform nodes, the fiber optic network medium, including the fiber optic transmitters that provide electrical-to-optical coupling, are not within the scope of the platform. Also,". Line 16, make "the gateway" become "The gateway." Lines 18-19, remove "or other systems, either safety-related or nonsafety-related,"	Not accepted	However, for clarity change lines 15/16 to read, ". . . not within the scope of <u>this review</u> ." Also, change line 17 to read, "...not within the scope of the platform <u>for purposes of this review</u> ."

No.	Draft SE Location	Suggested Change	NRC Resolution	NRC Disposition
4	Page 18, Line 11	Add "and a controller reset" after "manual switch selection"	Accepted	Editorial
5	Page 20, Line 5	"16-bit" should be changed to "12-bit"	Accepted	Editorial
6	Page 21, Line 24	"twelve" should be "eleven"	Accepted	Editorial
7	Page 22, Line 31	"DC33" should be "DC34"	Accepted	Editorial
8	Page 22, Line 36	"DC33" should be "DC34"	Accepted	Editorial
9	Page 24, Line 5	"Each AO channel consists" should be changed to "The AO circuitry is composed"	Accepted	Editorial
10	Page 28, Line 7	It should be "PBUSIF" instead of "PBSUIF"	Accepted	Editorial
11	Page 52, Line 4	It should be "CGD" instead of "CDG"	Accepted	Editorial
12	Page 57, Line 2	It should be "3.2.2.8" instead of "3.8"	Partially Accepted	Change the reference to "3.2.2.8" to "3.6"
13	Page 61, Line 29	Remove "Thus, the SInstP is an ASAI."	Not accepted	This application-specific action item (ASAI) has been noted in other licensing TR SEs and is useful to both licensees and the staff
14	Page 106, Lines 1-5	Paragraph (Lines 1 to 5) should be removed.	Not accepted	The C-Link communication processor and software development were reviewed as part of the SE; however, all inter-divisional communication and communication outside of the safety channel is out-of-scope of the review.
15	Page 121, Lines 31-34	Remove "Although not in the scope of this evaluation" and insert "In addition" instead.	Accepted	For additional clarification, modify Page 122, lines 13-14 to read, "...the communications capabilities provided by the HFC-6000 platform (that are within the scope of this SE) are suitable to support..."

No.	Draft SE Location	Suggested Change	NRC Resolution	NRC Disposition
16	Page 187, Item 5	Remove this open item	Not accepted	The Open Item clearly points to section 3.3.3 of the SE for more details. However, for clarity, modify line 7 to read, "... the environmental stress (<u>i.e., temperature and humidity</u>) withstand "
17	Page 187, Items 6, 7, and 8	They should be combined into one open item	Accepted	Items 6, 7 and 8 can be combined into a single ASAI with 3 sub-bullets. However, the references to each section in the SE that resulted in each ASAI should be preserved.
18	Page 188, Items 3,4	Combine this item 3 with item 4 by specifying "safety-related system project" in item 3.	Accepted	Items 3 & 4 can be combined into a single ASAI; however, the references to each section of the SE that resulted in each ASAI should be preserved.
19	Page 188, Item 5	Remove this item. After item 3 and 4 are combined, item 5 is automatically required by BTP 7-14.	Not accepted	This ASAI has been noted in other LTR SEs and is useful to both licensees and the staff.
20	Page 188, Item 7	Remove this item.	Accepted	Items 7, 8, 9, 11, 13 and 14 can be merged into a single ASAI with an "Equipment Qualification" heading that has multiple sub-bullets. However, the references to each section in the SE that resulted in each ASAI sub-bullet should be preserved.
21	Page 188, Item 8	Add "Otherwise, the licensee must demonstrate the application using HFC-6000 platform qualifies plant-specific safety conditions."	Partially accepted	Reword the added language to read, "Alternately, the licensee is responsible for appropriate testing and/or analysis to demonstrate that their specific HFC-6000 based application is qualified for use under plant-specific conditions."

No.	Draft SE Location	Suggested Change	NRC Resolution	NRC Disposition
22	Page 188-189, Items 9, 11, 13, 14	Remove these items.	Accepted	Items 7, 8, 9, 11, 13 and 14 can be merged into a single ASAI with an "Equipment Qualification" heading that has multiple sub-bullets. However, the references to each section in the SE that resulted in each ASAI sub-bullet should be preserved.
23	Page 190, Items 19, 25	Remove these items.	Not accepted	These ASAI's have been noted in other LTR SEs and are useful to both licensees and the staff
24	Page 190, Item 23	Remove this item.	Accepted	ASAI 23 may be merged with ASAI 6; however, the references to each section in the SE that resulted in the ASAI's should be preserved.
25	Page 191, Items 28, 29, 30	Remove these items.	Not accepted	These ASAI's have been noted in other LTR SEs and are useful to both licensees and the staff