**MITSUBISHI HEAVY INDUSTRIES, LTD.**
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TOKYO, JAPAN

June 8th, 2009

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-09297

**Subject: MHI's Responses to US-APWR DCD RAI No. 367-2419 Revision 1**

**Reference:** 1) "Request for Additional Information No. 367-2419 Revision 1, SRP Section: 18 - Human Factors Engineering, Application Section: 18.8 Procedure Development," dated May 14th, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Responses to Request for Additional Information No. 367-2419 Revision 1."

Enclosed is the responses to 1 RAI contained within Reference 1.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,

Y. Ogata

Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Responses to Request for Additional Information No. 367-2419 Revision 1

CC: J. A. Ciocco
C. K. Paulson

D081
NRO

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Enclosure 1

UAP-HF-09297
Docket No. 52-021

Responses to Request for Additional Information No.367-2419
Revision 1

June 2009

## RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**6/8/2009**

**US-APWR Design Certification**

**Mitsubishi Heavy Industries**

**Docket No. 52-021**

| | |
|---|---|
| **RAI NO.:** | **NO. 367-2419 REVISION 1** |
| **SRP SECTION:** | **18 - HUMAN FACTORS ENGINEERING** |
| **APPLICATION SECTION:** | **18.8 PROCEDURE DEVELOPMENT** |
| **DATE OF RAI ISSUE:** | **5/14/2009** |

**QUESTION NO. 18-44**

NUREG-0711, Section 9.4, Criterion 8 states:
*A plan for procedure maintenance and control of updates should be developed. Procedure modifications should be integrated across the full set of procedures; alterations in particular parts of the procedures should not conflict nor be inconsistent with other parts.*

Section 18.8.3 of the US-APWR DCD states:
*Procedure modifications are integrated across the full set of procedures; alterations in particular parts of the procedures are made to be consistent with other parts. Changes to procedures are documented and analyzed for their potential impact on HSI. Any procedure implementation issues that negatively affect Human Performance are identified as HEDs. The HEDs are tracked and dispositioned.*

In the second paragraph of section 18.8.3, the staff notes that the US-APWR Quality Assurance Plan is the vehicle for the maintenance and control of updates for the paper procedures and the CBPs. Section 18.8 of the US-APWR DCD does not provide a reference for this document. Please provide this document for staff review, so that the staff may verify the process for maintenance and control of updates for procedures meets criterion 8 in section 9.4 of NUREG-0711. If the QA plan is not available for review, please give the estimated date as to when the document will be available for review. Or, describe in detail the process to be used for maintenance and control of updates for paper based and computer based procedures.

Section 18.8.3 of the US-APWR DCD mostly restates the criterion in NUREG-0711 and does not demonstrate, with sufficient detail, **how** criterion 8 of NUREG-0711 section 9.4 will be met. The staff believes that information to meet this criterion should:

- Provide complete process descriptions
- Provide a flow diagram, or similar graphic example, that illustrates the relationship of the different process steps to each other (if applicable)
- Contain a description of the applicable technical requirements with sufficient quality, to enable the staff to verify that the product conforms to the intent of the methodology

Please provide detailed information to satisfy criterion 8 of NUREG-0711, section 9.4.

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**ANSWER:**

New Section 5.8.3 "Operating Procedure Maintenance" will be added to "HSI System Description and HFE Process" (MUAP-07007-P). The following paragraph currently in Section 5.8.2 will be moved to this new section:

> After the plant is constructed and start operation, operating experience of other plants and the changes that are made in the plant, including changes to HSI designs of HSI system are to be verified for needs of procedure changes.

In addition the following will be added to this new section:

> Any procedure changes needed after the original procedure validation will be conducted by the same process as the original procedures, described above:
>
> - The procedure development team will include the same disciplines.
> - The same procedure style guide will be used.
> - The same process will be used for analytical verification and integrated system validation.
> - The same tracking and resolution process is used to resolve HEDs generated during validation activities.
> - The same process as described in Section 4.8 is used to convert the revised paper procedure to its electronic procedure format, and to control the configuration of both formats.

Procedure changes may be initiated due to improvements in operating or maintenance methods, or due to plant design changes. Regardless of what initiates the need for a procedure change, the procedure change process described above applies. Figure 5.8.X shows the interaction between the plant design change process and the procedure change process.

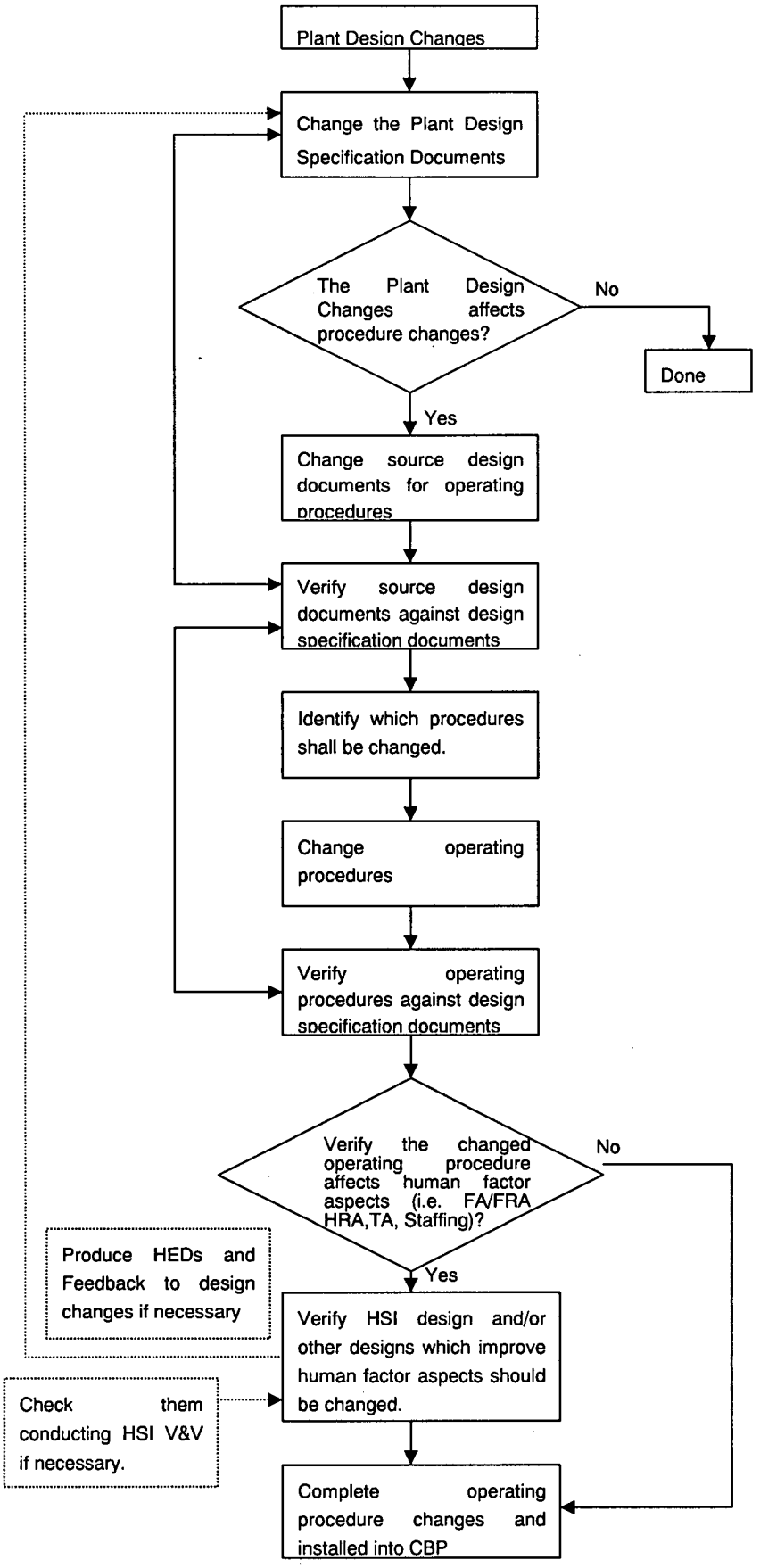


Figure 5.8.X Operating Procedure maintenance and control of updates

**Impact on DCD**

There is no impact on the DCD

**Impact on COLA**

There is no impact on the COLA

**Impact on PRA**

There is no impact on the PRA

This completes MHI's responses to the NRC's questions.