

## Ruesch, Eric

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**From:** Michael.Stevens@sce.com  
**Sent:** Wednesday, September 21, 2011 7:04 PM  
**To:** Ruesch, Eric  
**Cc:** Warnick, Greg; David.Axline@sce.com; Ryan.Treadway@sce.com  
**Subject:** HPSI Tubing Modification  
**Attachments:** S2-1204-ML-020 SH 7 Rev 1.pdf; S2-1204-ML-020 SH 7 Rev 0.pdf

Eric,

The station has been performing an Apparent Cause Evaluation to investigate the issue you identified associated with the HPSI tubing modification installation that was not in accordance with the 6 ft tubing span requirement. You identified the tubing was installed in accordance with the drawing dimensions for a support span in excess of 6 feet, which was not consistent with the note on the drawing requiring a maximum unsupported length of 6 feet. Additional facts have been identified that you might want to consider.

During the investigation associated with the ACE, it was identified that Note 2 on ISO drawing S2-1204-ML-020 Sheet 7 stating "...per M-DSC-307, span between supports not to exceed 6 feet" was added after the installation was completed. During the Unit 2 Cycle 16 outage, a field ECN was issued against drawing S2-1204-ML-020 Sheet 7 Revision 0. When the drawing was revised to Rev 1, the field ECN was incorporated. During the revision the original notes on the drawing were removed and a standard set of tubing drawing notes were added. Revision 0 and Revision 1 of the ISO are attached below. Revision 0, which was used for installation of the tubing, did not include a reference or note that specified a maximum unsupported tubing span. Revision 0 referenced construction specification CS-J5, which does not specify a maximum span for this tubing. CS-J5 states the tubing span dimensions shall be specified on an isometric. Revision 1 referenced M-DSC-307 for the maximum unsupported span of six feet, but M-DSC-307 was not referenced in Revision 0 of the ISO.

During your Exit, you characterized the performance deficiency as a failure to perform the HPSI modification in accordance with the seismic requirements specified by the NECP. Based on the information identified by the ACE team, it appears that the installed tubing span was not in conflict with a maximum span limit per the NECP. The drawing revision used to perform the installation contained no requirement for a maximum tubing span. The revision to the drawing that introduced the conflicting note specifying "span not to exceed 6 feet" was made after the installation was complete in the plant. Please note that the ACE team has identified the addition of the conflicting note to the drawing Revision 1 as an inappropriate action and it will be addressed as such by the ACE.

### S2-1204-ML-020 SH 7 Rev 0 Note 2

"Support location tolerance is plus or minus 6". Location, quantities and types of tube supports are identified on the drawing."

### S2-1204-ML-020 SH 7 Rev 1 Note 2

"Support location tolerance is plus or minus 6" per M-DSC-307, span between supports not to exceed six feet."

### Timeline

1/21/2009 - U2 NECP Walkdown identifies existing supports for tubing routing  
5/5/2009 - U2 NECP Issued to Construction  
U2C16 - NECP Implemented  
12/18/2009 - U2 NECP Turned Over to Operations  
7/28/2010 - ISO Drawing S2-1204-ML-020 Sheet 7 revised to Rev. 1 (adding note requiring span <6ft.)

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