

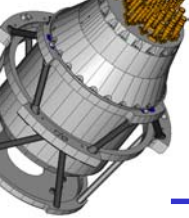
Product Assurance
Status and outlook since the IBDR
(February 19-20 2002 at IAS)

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HFI PAM

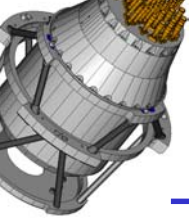
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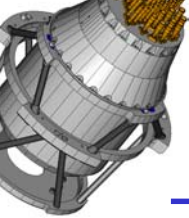
Plan

- PA situation after the IBDR
- PAP status
- Management of Air Liquide PA
- Cleanliness Control Plan
- Safety Plan
- Base-line changes : Consequences for PA
- Other PA documents



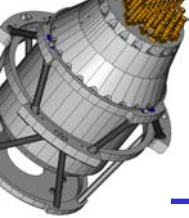
Situation after the IBDR

- **Priority** : Following the IBDR and the issue of the Compendium of comments (received March 8th), priority is obviously to review and to up-grade documents presented for the review.
- **PA support** : PA support asked to reinforce the PA at system level in IAS is not arrived yet. This affects now :
 - the writing of the PA manufacture procedures and MIP planning organisation (with the SE).
 - the preparation of the verification of the AIT procedures (with the AIT Manager).
- **Strategy adopted** :
 - To correct system level documents when information is available,
 - S/S :
 - to distribute duties,
 - to spread information, templates and examples to fulfil due documents.



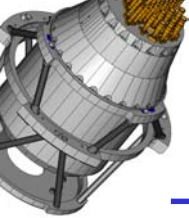
The PAP situation

- Numerous errors or imprecision have been detected by ESA in the Plan,
- Corrections require help of ESA for clarifications (NCR, management of configuration, etc...) ,
- Retained idea is to take advantage of the arrival of the new PA specialist at IAS to correct the PAP. This constitutes an excellent occasion to introduce him into the heart of the project.



Air Liquide PA management

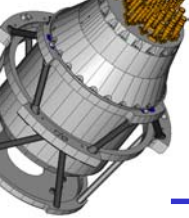
- Air Liquide is officially joining the project, but is in phase B. It is charged of design, manufacture and assembly of the dilution cooler, the 1.6/0.1K exchanger (that constitutes the HFI cryostat). It is also charged of the He DDCU (Dilution Cooler Control Unit) manufacture.
- These activities are on the critical path.
- I presented to AL status of general PA activities at system level and specific duties for this S/S, at Grenoble, on March 7th,
- AL PAM produces progressively PA documents : PAP and compliance matrix are available.



Cleanliness Control Plan (Rev.01, Issue 02)

Principal improvement : (March 29th, 2002)

- *List of plans modified : Only plans already submitted listed,*
- *Permanent venting until launch? Submitted to the Project by e-mail,*
- *Precisions brought to remove all TBC,*
- *Molecular absorption and multiple reflections on mirrors : Considered by the Project as weak. No other calculations made,*
- **Cleanliness procedures for manufacture, test and integration of sensitive parts (pipes, isotopes) will be written by AL,**
- *A detailed particulate budget based on the HFI Master Schedule document written. It will constitute the "HFI Particulate Contamination Evaluation" document (AN-PH192-200167-IAS). Under evaluation by now.*



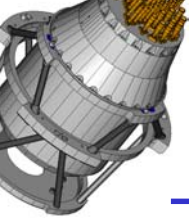
Safety Plan (*Issue 02, rev.0*)

Principal modifications : (*March 27th*)

- *The Plan includes now corrections after ESA comments and the CNES CGS Safety Regulations,*
- *List of S/S plans : Only Air Liquide Plan maintained, because AL manages high pressure,*
- *Safety procedures include now :*
 - *Principles of safety regulation,*
 - *Accident situation : Minor and major with procedures to apply.*
- *Removal of facilities test programme chapter.*

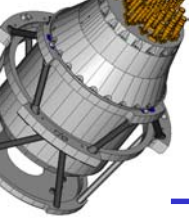
Remark: CGS Safety Regulations should be completed because they do not treat technical safety instructions for material building : General design criteria and rules for pressure relief are not given inside.

Detailed safety procedures will be written by the AL PAM.



Base-line modifications : consequences for PA

- **DPU :**
 - New design interface between REU, DPU (PDP board) and the satellite has been defined, then frozen, during the last *Power Interface Meeting* held at Cannes, April 8th. (TN-PHB-250901-LAL issue 3, rev.0. April 11)
 - Consequences for existing PA documents :
 - Minor changes are foreseen into the **DPU and REU FMECA** made at system level.
 - **FDIR** should be entirely reconsidered (week 17 ?).
- **FPU :**
 - A PA meeting was held in IAS with Air Liquide on April 12th to prepare the up-grade of the **cryo-chain FMECA** after AL design modifications. (MM-PH192-200166-IAS).
(Note that He circuitry and ISN electronics are not frozen).
 - Specific **Air Liquide DPL and DML** are under preparation.

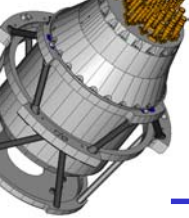


Other documents (1/2)

- **HSIA :**
 - New person is arrived in LAL on April 1st to write on-board software and to participate to the HSIA analysis.
 - No information nor model found on ESA site,
 - The purchase of 2 ESA recommended books has been ordered in the USA : waiting for delivery.
- **CIL, DML, DPL:**

No inputs received since the IBDR.
- **Derating :**
 - Is underway in LAL for DPU parts interfaced with the satellite.
 - For other S/S (CESR, ISN), parts choices have been approved by the CPPA.
- **VCD :**

A template of Design Verification Matrix has been sent to each group on March 19th, with separated clear explanations and examples.



Other documents (2/2)

- **Configuration status :**
 - Management made by the IAS Project Controller (B. Cougrand).
 - Baghera DMS (documentation) is connected to AGILE (configuration) linked to the Product Tree. They are fully operational at IAS.
 - All documents sent to IAS are under control.
- **MIP planning :**

Will be managed when sub-contractors will have been chosen after design freezing. Pre-orders are on-going for S/S, including the electronics of the CQM, FM and spare.
- **NCR system :**

Not in service yet.