

ABERDEEN CHEMICAL PLANT

SAFETY SYSTEMS REVIEW

10/13/86

Review Item	Concerns	Action Completed/Planned
Propane System - Tanks & Vaporizers	1) Electrical equipment not explosion proof & instr. revisions needed. 2) Material of construction of transfer pump. 3) Remote S/D capabilities 4) Full port sight glass in unloading system. 5) Absence of leak detection system in sphere and boiler area. 6) Use of direct fired vaporizers as backup The direct fired vaporizers are for emergency use only and appropriate safety revisions must be made before use. 7) Guardposts protecting unloading station & pump pad.	1) AFE written & approved. Estimated project completion is 12/86. 2) Transfer pumps are ductile iron which are acceptable. 3) Class "A" design complete, to be AFE'd in 3rd Quarter Fiscal 1987 AFE Proj. 4) Eliminated sight glass but retained flow indication. (Gate w/external lever which rotates with gate.) (JME). 5) Design complete. Installed and operational by 12/86 in sphere & boiler area. 6) Having another natural gas supplier will eliminate the need for the direct fired vaporizers. 7) Included in Class "A" design (Item 3). Will be installed by 11/86.
Catalyst Freezers	1) Instrumentation PM needed 2) Back-up temp. indication. 3) Monitoring by operations. 4) Emergency plan does not exist for freezer failures. 5) Extended power outage.	1) To be discussed in PM meeting week of Oct. 13. 2) Installed & operational in little freezers. (DWH) 3) Revise A-operator log sheets by 12/86. (DWH) 4) P. Engineering will investigate. Complete by 2/87 (MLN). 5) AFE approved. Start mechanical design in October, 1986. Installed

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Bleeder Valve Program	1) Program not up-to-date	1) Program is up-to-date but the surveys are not. Plan & surveys up-to date 10/86 and again in 12/86.
Emergency/Disaster Plan	1) Plant Preparedness 2) Community Awareness	1 & 2) Revisions near completion for review. (AHS)
Power Failure Procedures	1) PM of AMS system valves and instrumentation 2) Emergency generator PM 3) Reactor T/P chart drives not on emergency power. 4) Fire pump run lights. 5) Instrument air pressure indicators not on emergency power 6) Reactor mechanical seal integrity 7) Emergency Equipment - Diesel supply. 8) Operator training on reactor mechanical seal power failure procedures.	1) To be discussed in PM meeting wk of 10/13. 2) To be discussed in PM meeting wk of 10/13. 3) Estimated project completion (installed and operational) is 10/6. 4) Installed & operational. 5) Estimated project completion is 10/86. 6) Bladders installed in old module on 5/27. Bladder ordered for new module. Total project installed & operational by 10/86. 7) Class "A" design was issued in Sept. Installed & oper. by 4/87 (JGC). 8) Training is complete. (JME)
VCM Sphere/Unloading Area	1) Need to "mothball" bullets 2) PM on unloading compressor shutdown instrumentation (temp & pressure switches). 3) Compressor belt drive PM 4) Development of effective railcar chock 5) Grounding system upgrade	1) Bullets were decontaminated and blinded. Plan to inject vapor phase corrosion inhibitor by end of Oct. 1986 to complete mothball plans. (TFL) 2) To be discussed in PM meeting wk of 10/13. 3) To be discussed in meeting wk of 10/13. 4) Completed and implemented. 5) Grounding bolts in plant/to be installed in Nov., 1986. (DAM)

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ABD00228332

Review Item	Concerns	Action Completed/Planned
VCM Sphere/Unloading Area (Continued)	6) Routine inspection of sphere transfer pumps and of the tandem seals required. 7) Sphere transfer pump cavitation problem may cause pump failure. 8) Remote operated valve installation and instrumentation. 9) Firewater supply to railcars may be inadequate. 10) Redundant level & pressure alarms for sphere should be pursued. 11) Drain valve on dike area left cracked.	6) On chief operators checklist (Once/shift). (DWH) 7) Under evaluation by Process Engineering. Will be complete by 12/86. (DRF). 8) This project is part of other Remote Operated Valve project. Waiting for VCM sphere shutdown. 9) Determined inadequate. 4th Fiscal Qtr 1987 Budget Item. (JGC) 10) Part of remote operated valve project Installed by 4/87. (FGJ). 11) Under evaluation by EBB. Project complete by 2/87.
Fire Training	1) Maintenance involvement	1) Personnel have been trained and instructed in their role in a fire. (AHS).
Mechanical Seal Systems	1) Reactor seal failures prevalent 2) Training on reactor seals 3) Routine inspection of mechanical seals in VCM service may be inadequate.	1) Program to reduce seal failures ongoing. Status reports being issued. Status report of 7/17/86 latest update. JME following up. Old unit complete. New unit complete 10/86. 2) Complete 3) Adequate in new module. Need to set up full "A" operator check list in old module. Will be complete 12/86 (CWT).

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Review Item	Concerns	Action Completed/Planned
Relief Valve PM Reactors	1) Need maintenance procedures for relief valves 2) Valve PM Program implementation	1) Issued Maintenance PM program. 2) Have plan for old module reactors in August/September and new module in October. A report will be issued in 11/86 to complete project.
Relief Valve PM-Non Reactor	1) Need Non-Reactor Program	1) Serviced non-reactor valves in old module that have not been serviced for 5 years in August shutdown. Will service ones in new module during Oct. shutdown. Plans underway to routinely service all non reactor relief valves by 12/87 (DAM).
Fixed Point Monitor	1) Line pluggage/leakage may give erroneous results.	1) To be discussed at PM meeting wk of 10/13/86.
P-1 PA Tank	1) Tank may be unsafe due to tank condition and/or support.	1) Preliminary thickness testing on the vessel was favorable. Write-up to be given by TFL after further testing (TFL).
	2) PA fluff from tank exposure and environmental problem.	2) Class "A" design (revised) is complete & issued. 3rd Qtr Cap. Budget item.
Safety Systems PM (attached)	1) Are listed items still being completed.	1) Process Engineering will monitor program and establish the routines.
Gas Detectors in Dryer Area	1) Dryer Detectors not operational.	1) Have been installed. Will be operational by end of Oct., 1986. (SKG).
Infrared Surveys of Electrical Equipment	1) Yearly survey	1) Documentation is needed.

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Ammonia System	1) Annual inspection and RV check 2) Written safety program for unloading trucks. 3) Leak patrol	1) To be discussed at PM meeting wk of 10/13. 2) Complete by 11/6. Utility supv. will take care of unloading. 3) To be discussed at PM meeting wk of 10/13.
Remote Operated Valve Project	1) Project Completion	1) Old module valve installation 70% complete. System to be completed Jan, 1987. New module valve installation will be 70% complete during Oct shutdown. System to be completed by April 4, 1987. (FGJ)
Sulfuric Acid System	1) Procedure on unloading 2) Training on unloading procedures.	1) Have written procedure on unloading. 2) 10/86 - will be complete.
Chlorine Cylinders	1) Training on use of leak repair kit. 2) Operator training on cylinder handling.	1) Training has been completed. 2) Will be complete by 10/86. Valve
Indications	1) Compliance plan limit switches 2) 1986 limit switch project 3) 1987 limit switch project	1) 26 switches were installed as of 7/25/86. Expected completion of re-maining 44 items is 1/27/87. 2) 26 switches were installed as of 7/25/86. Expected completion of re-maining 21 items is 1/27/87. (FGJ) 3) Class "A" design completed. Sent to Mechanical. 4th Qtr. 1987 Cap. Budget project. (FGJ).
Portable Gas Detectors	1) Quality of repair inconsistent 2) Water condensation on detection head. 3) Test procedure.	1) 2 training sessions have enhanced repair quality. 2) Solved using ambient temp. charging cabinet. 3) Will provide operations w/test procedure for HNU's. Complete by 12/86 (AHS).

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VCM Piping	1) Guardposts to Protect VCM Piping; concrete west 1) Complete side of road passing w/curb. 2) Protection against overturned railcar. 2) 3rd & 4th rail required/planned. Funded in maintenance budget. Installed by Nov. 1986. (DAM).	
I & E Alarm and Shutdown Interlock PM Program	1) Boilers - complete once/year 2) Incinerators - complete twice/year 3) Emergency kill system twice/year 4) Catalyst freezers 4 times/year 5) Vinyl dryers once/year 6) Propane vaporizers once/year 7) Inert gas generator once/year 8) Reactor instrumentation	1-8) To be discussed in PM meeting wk of 10/13.
Incinerators	1) PM program to check internals of liquid seal flame arrestor. 2) Refresher training program. 3) Revise and update incinerator log sheet. 4) PM to check alarms.	1) To be discussed in PM meeting wk of 10/13. 2) Complete by 4/87. 3) Complete. 4) To be discussed in PM meeting wk of 10/13.