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Experience with Operational Readiness Review for Commercial Development Line

Jennifer K. Wheeler, P.E.

Fuel Cycle Information Exchange

June 29, 2010

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Experience to Date Preparing for NRC ORRs

2003 – Uranyl Nitrate Building
2004 – BLEU Preparation Facility
2004 – Oxide Conversion Building
2006 – BLEU Preparation Facility Restart
2009 – Commercial Development Line

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ORR Process

- Authorization Letter, issued by NFS President, appoints ORR Board and Team
- ORR Team
  - Develops ORR Checklist
  - Completes activities on ORR Checklist, submits objective evidence
- ORR Board
  - Approves ORR Checklist
  - Monitors progress through status update meetings
  - Reviews objective evidence
  - Reviews and approves final report
  - Issues “Approval for Start-Up” letter to NFS President

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Groups Involved

- Engineering – Project and Process
- Operations
- Safety – Rad. Protection, Industrial, Environmental, Emergency Preparedness, Nuclear Criticality, ISA
- MC&A
- Security
- Training
- Maintenance
- Calibration
- Quality Control
- Others as needed

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ORR Checklist

CDL Operational Readiness Review ***All Activities

Activity ID	Activity Name	Physical % Complete
CDL Operational Readiness Review		
ORR Phase 2 Priorities 1 - 8		
Phase 2 Priority 6 Scrubber and Ventilation		
Phase 2 Priority 6 Project Engineering		
P2610	Project Eng Set Point Analysis Complete and Given to Safety for Approval Phase 2 Priority 6 Scrubber and Vent	100%
P2615	Project Eng Delineate SSC "Not Authorized for Use" & "Isolation from Configuration Controlled SSC" Ph 2 Priority 6	100%
P2620	Project Eng Verify Equipment, Instruments, Utilities and Lines Labeled/Colorcoded Phase 2 Priority 6	100%
P2625	Project Eng Verify P&IDs Complete and Correct and Finalized by Drafting As-Builts Phase 2 Priority 6	100%
P2630	Project Eng Verification of Red-Lined or As-Built Electrical Drawings for Phase 2 Priority 6	100%
P2635	Project Eng Conduct Functional Testing Phase 2 Priority 6	100%
P2640	Project Eng Verify Equipment and Component Data in LINC for Phase 2 Priority 6 Scrubber	100%
P2645	Project Eng Verify All Equipment Calibrations Complete in Phase 2 Priority 6	100%
P2655	Project Eng Complete or Stop Work on SSC to be brought under Configuration Control for Phase 2 Priority 6	100%
P2660	Project Eng Complete NFS-CM-002 Attachment A Construction/Installation Phase of New SSC Contruction/Startup Checklist	100%
P2665	Project Eng Construction/Installation Phase Complete/SSC Ready for Startup for Phase 2 Priority 6 - Handover	100%
P2670	Electronic Eng Interlock Narrative P&ID Complete and Provided to PE for Testing Phase 2 Priority 6	100%
Phase 2 Priority 6 Process Engineering		
P26100	Process Eng Verify Safety Systems/Alarms/Interlocks to function per ISA/IAC in Phase 2 Priority 6	100%
P26102	Process Eng Conduct System Tests to Verify Operability of SSC Phase 2 Priority 6	100%

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Objective Evidence

- Submitted for each checklist item to document completion of activity
- For certain items, specific evidence is required as noted on the Completion Form
- Turned in to a Coordinator for inclusion in Evidence File

Certification of Operational Readiness Review Item

Project: CDL	ORR Item Tracking Number: P21220

	Item Type (Check one)	Required Evidence
☒	Procedure Check/New/Revision	Copy of procedure cover sheet
☐	Cold Process Test	Copy of LOA cover sheet
☐	Walk Test	Documented evidence attached
☐	New/Revised P&ID	Copy of approval block
☐	Safety Related Equipment (SRE) Test	Functional Verification record
☐	Audits/Inspections	Copy of cover page
☐	Regulatory Commitment	Documentation of commitment satisfaction
☐	Regulatory Approval	Copy of approval documentation
	Other: See Attached	Objective evidence of completion if available (memo, cover sheet, etc.)

SOP SSRC Final Approval 53 and 19O MC&A Columns

The undersigned certifies the readiness of the item described above and has attached any required evidence to this form:

Printed Name: Ron Keith

Signature: Ron Keith Date: 4/27/09

This form is to be used as a coversheet for Objective Quality Evidence, or as signed affidavit/certification, documenting the completion of an approved ORR activity.

This form is **NEVER** to be used to identify new activities that are not included in the approved ORR activity list, or to identify conditions that must be addressed as part of project closeout. NFS-GH-902 addresses the proper method to be used to ensure new activities are identified and tracked through completion.

NFS Operational Readiness Review Form Revision: December 2008

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Verification & Validation (V&V)

- Team Review of P&IDs and SOPs
- Member Qualifications and Independence
  - Minimum 5 years experience in SNM operations or chemical processing
  - Need to be familiar with Crit Safety principles, P&IDs, Industrial Safety, MC&A, ergonomics, flowdown of safety controls into documents
- Team comments
  - Graded based on significance (A, B, C)
  - Formally recorded
  - Provided to system owner for resolution
  - Team must agree with proposed resolution
- Report issued to present results

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V&V of P&IDs

- Tabletop verification
  - Accuracy of continuity with adjoining P&IDs
  - Safety Related Equipment identification
  - Major equipment (tanks, pumps, etc.)
  - PLC interlocks
- Field validation
  - Component relationships / arrangement
  - Piping line sizes, materials of construction
  - Labeling / tagging

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V&V of Procedures

- Tabletop verification
  - Adequate information / logical sequence of actions
  - Accuracy, completeness
  - References to other procedures
  - Ease of use, clarity, understanding
  - Administrative IROFS identification
  - Runsheets – logical flow, space to write
- Field validation
  - Observe operator actions
  - Ergonomics, visibility/audibility of alarms
  - PLC display screens
  - Operator comments/observations about SOP

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ORR Release / Approval for Start-Up

- Letter issued by ORR Board to NFS President concluding that ORR activities are complete, and requesting concurrence to allow start of operations
- Any activities that are not yet complete must be noted as “exceptions” and identified as “pre-start”, “start-up” or “post-start” activities
- NFS President approves start of operations

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Examples of Exceptions

- "Pre-start" activities
  - System tie-ins to SNM bearing lines/processes
  - Removal of system isolation signage
  - Revision of P&IDs to reflect tie-ins
  - Uncover NCS Station Limit Cards
- "Start-up" activities
  - Performed in conjunction with initial start-up
  - Functional testing of safety related equipment that requires SNM and/or chemical feeds to perform test
- "Post-start" activities
  - On-the-Job training
  - Sampling to support waste profiles

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NRC ORR Team Site Visit

- Dedicated room
- Computer access (if possible)
- Copies of documents for review
- White board
- Telephone
- Facility tours
- Set up daily outbriefs with NRC Team to identify issues early that need resolution

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Subject Matter Expert Contact List

CDL Operational Readiness Review
NFS Contact List

Name	Topic Area	Phone Numbers
OPERATIONS		
Ray Bond	Operations Management	1740 791-4336
Tim Sheehan	Operations Management	1778 791-4047
Danielle Rogers	Facility Manager	5475 388-0235
Mark Wilson	Asst. Facility Manager	1281 388-0052
STARTUP		
Brian Carmack	ORR / Project Manager	5689 791-1802
Dave Brown	Construction	5651
Doug Russell	Test Engineer	5685
Ron Keith	SOPs	5646
Doug Craig	V & V	1483 791-4120
Ashley Morris	Configuration Management / LINC	1758 791-1520
PROCESS ENGINEERING		
Dean Nixon	Section Manager, Setpoint Analyses	5507
Adam Harber	ADU, Utilities	5551
Melina Christian	UF6	5511 220-9789
Chris Pendleton	Column & Tray Dissolvers, Liquid Discards	5600
Ken Thompson	Ventilation	5518 791-1050

CDL Operational Readiness Review
NFS Contact List

Name	Topic Area	Phone Numbers
PROJECT ENGINEERING		
Harry Hrenda	Design, Construction	5564
Alan Hardin	Functional Design Specifications for Electrical SRE	5620
TRAINING		
Sonya Sanders	Training Manager	5529 791-1610
SUPPORT		
Jennifer Wheeler	Licensing & ISA	5429 791-1795
Emily Senter	ISA / IAC	5546 791-1806
Michael Eakin	NCS	5582
Brian Clouse	Health Physics	5589 388-0196
Gail Tapp	Industrial Safety	5569 388-0315
Daniel Ashworth	Fire Safety	5561 791-3185
Phil Creamer	Fire Safety	5576 791-1686
Robert Holley	Environmental	1777 791-6309
Sarah Barron	Emergency Preparedness	5543 791-0853
Terry Lewis	MC&A	5673
James Lee	Security	5639 791-5409
James Miller	Safety Culture	5686

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List of Documents Provided for Review

CDL Operational Readiness Review
List of Review Documents

COPIES (Feel free to mark up as needed)
DESIGN / OPERATIONS
Engineering Design File
P&IDs
SOPs
Training Lesson Plans / Toolboxes
Safety Culture Evaluation
BPI (Business Process Improvement) Activities
SAFETY BASIS
ISA Summaries (License Amendment Rev. 1, non-License Amendment Rev. 0)
Baseline Design Criteria
Materials of Construction information
NCSEs, Control Flowdowns, and CL-28
FHA
Radiological ACE (Accident Consequence Evaluation)
Chemical ACE (Accident Consequence Evaluation)
Chem/Rad/Fire Control Flowdowns
IROFS/SRE Lists
Functional Design Specification documents for electrical SRE

CDL Operational Readiness Review
List of Review Documents

ORIGINALS (please use for review, but return intact)
STARTUP / ORR
V & V Report
ORR documentation
SAFETY BASIS
IAC (Internally Authorized Change) packages / 10 CFR 70.72 reviews
Natural Phenomena structural design information
Setpoint Analyses (these are stored in another room, please ask for them as you need them)
SRE Test results

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Presentation Counts!

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