

# NCSX Close-Out Documentation Plan Proposal

June 3, 2008

# Background

- DOE has directed that the NCSX Project be cancelled.
- As part of the orderly closeout of the Project, a major task will be compile and store all design and manufacturing documentation, including specifications, procedures, shop travelers, etc
- This effort includes both ORNL and PPPL.
- ***Time scale: complete by the end of this FY.***

# The NCSX Web is the proposed focal point for this documentation

- The NCSX Engineering Web already contains the majority of information that has been “approved”.
- What is not included on the NCSX Engineering Web are:
  - Information only stored in “hard” copy in the Ops Center
  - Information that may or may not be complete that is stored on individual engineers’ computers (e.g., FEA, design requirements documentation not yet approved such as draft SRDs, draft calculations, etc.)
  - Completed and in-process models and drawings contained in Inralink
  - Pertinent design memos, photographs, and other records that could provide in valuable information on the NCSX design process.
  - Other records called out in the NCSX Document Records Plan ([NCSX-PLAN-DOC-04](#))  
=>[http://ncsx.pppl.gov/SystemsEngineering/Plans\\_Procedures/NCSX\\_Mgmt\\_Plans/DOC/NCSX-PLAN-DOC-04-Signed.pdf](http://ncsx.pppl.gov/SystemsEngineering/Plans_Procedures/NCSX_Mgmt_Plans/DOC/NCSX-PLAN-DOC-04-Signed.pdf)

# Documents we must archive

Records defined in the NCSX Document Records Plan include :

<b>Record Type</b>	<b>Definition</b>
Document	Recorded information that describes, specifies, reports, certifies, requires, or provides information, data or results. A document is not a record until it meets the definition of record.
Calculations	Results obtained from mathematical processes used in design, operation, etc.
Guides	A document that provides additional information to NCSX project staff. Examples might be users' guides or documents that describe possible techniques for analysis.
Criteria	A document that defines the design criteria to be used on NCSX.
Procedure	A document that provides an orderly, detailed method of accomplishing tasks within the applicable Laboratory and NCSX guidelines and with established responsibilities and actions.
Record	A completed document or other media that provides objective evidence of an item, service, or process.
Standard	A document that defines the minimum quality and performance outcome of a process.

# Also to be archived

- Conference publications & posters (in electronic format)
- CAD drawings & models
- FEA analyses and models (most stored on FTF site or p-drive; need to archive the URLs and model descriptions).
- “Back office” support data & metrology data (already archived on the p-drive— need pointer on web).
- Inventory lists for hardware; roadmap between hardware and documentation.
- PRIMAVERA models (pdf models already exist on the web)
- WBS notes, presentations, and any files that now reside on personal PCs relevant to the WBS activities.
- Field travelers
- QC documentation
- Photos
- Deliverables from subcontracts such as EWI, prototyping activities, etc.
- Presentations that would be useful to re-start (examples: interference studies; metrology presentations, etc.)

# Approach


- Utilize the NCSX Engineering Web to provide electronic links and/or instructions on where to access to all documentation (e.g., for hard copy stored in Ops Center, the page would contain an inventory list organized by WBS and type of document; for completed drawings provide a link to the PPPL CADD web; for models and in-process drawings provide instructions on how to access Intralink, etc.).
- The Engineering Web page will be modified to include a new category entitled: “NCSX Closeout Documentation”
- Add Google Search function to the Web.

Microsoft FrontPage - C:\Documents and Settings\bsimmons\My Documents\My Webs\NCSX\_Engineering\index.htm

Normal (default font) B I U [Text Formatting Icons]

File Edit View Insert Format Tools Table Data Frames Window Help Type a question for help

Web Site index.htm\*



**NCSX** National Compact Stellarator Experiment Engineering Web

Web Pages: NCSX Home | Project Office | Physics | Procurement | Construction

FTP Servers: Design Data | Data for Suppliers

Project Files: Memos | Meetings | Photos | Files by WBS

Project Control: Cost Performance Reports | WPs | WP:Job Map

Plans & Procedures: NCSX Procedures | NCSX Plans | PPPL Procedures | PPPL Policies | NCSX:PPPL Procedure Matrix

Specifications & SOWs: Specifications | Design Criteria | SOWs | Project Guidance

Reviews, Analyses & R&D: Design Reviews | Open Chits | Analysis Reports | R&D Reports

Design Data: Technical Data | Design Descriptions | Bills of Material | Metrology

Fabrication, Assembly, Installation & Test Plans: Modular Coil Fab | TF Coil Fab | Coil Test Results | Facility Layout

Engineering Mgmt & Systems Engineering: Risk Register | Org Chart | WBS | Electronic Signatures | Training

ES&H, QA & Procurement: ES&H | ACC | NEPA | Audits | NCRs

Other: Stellarator Info | Useful Links

**NCSX Closeout Documentation**: Models | In-Process Drawings | FEA | TBD1 | TBD2 | TBD3 | Ops Center Materials | TBD4

Supporting Design Memos

Search NCSX: [Input Field] [Go] [Clear]

Getting Started | Site Index | PCS Primer | Estimating Guide | Style Instructions | Sample Documents | Spec Guidelines | SOW Guidelines | Design Rvw Guide | Design Completion | Analysis Guidelines | Intralink Guide | FroTools Guide | Procurement Guide

Design | Split | Code | Preview

Draw | AutoShapes

1:47@56kbps 1555 x 885 Default Custom

# Proposed storage requirements

- All electronic documentation to be stored, backed up, and accessible for a minimum of 10 years.
  - Software needed to access the information is to be kept available for at least 10 years.
    - Need to provide a Dell server with software installed and “frozen” in place.
      - Cost: \$3K, plus licenses for software.
      - Issue: maintenance costs for the 10 year period.
    - We need to define issues or limitations associated with FEA, PRIMAVERA, and CAD. These may be limited to 3 years without extraordinary efforts to preserve the “old” versions.
      - NOTE: All CAD released drawings are already stored in PDF.
- As the final step, an audit of the Web to assure that the data is all there, and in a usable form, with the data organized based on an appropriate “graded approach” considering cost vs. potential usage and benefit.



# Next Steps

- Bob, Phil & Ron – develop resources loaded schedule based on these discussions by tomorrow.
  - Propose to include time for people to “data mine” their computers & write summary notes. (~200-300 hrs/person for ~30 people)
    - Resources for organizing and posting and final audit (6 p-m + computer support)
      - Bob, Frank & Judy would sit down with each person to discuss their files and how their efforts should be spent.
    - For the server, software and setup ~\$40K.
    - Create data files for each modular coil, TF coils, & VV to store in Ops Center for each coil (Marianne & Cheryl) (~4p-m + 5K for fireproof cabinets). (run copies, vendor info,
      - Data sheet pasted with each coil indicating its ID and where info is available.
      - Need original and back-up stored in a separate location.
    - Need cabinets for X-ray films from MCs (\$5K)
  - Include time (4 p-m) for analysts to close-out key analyses. Goal: to preserve the ability to pick these up and re-run them for several years into the future. (Ron Strykowski – please include in your budget).
- Transmit requirements to ALL NCSX staff members at both PPPL and ORNL.