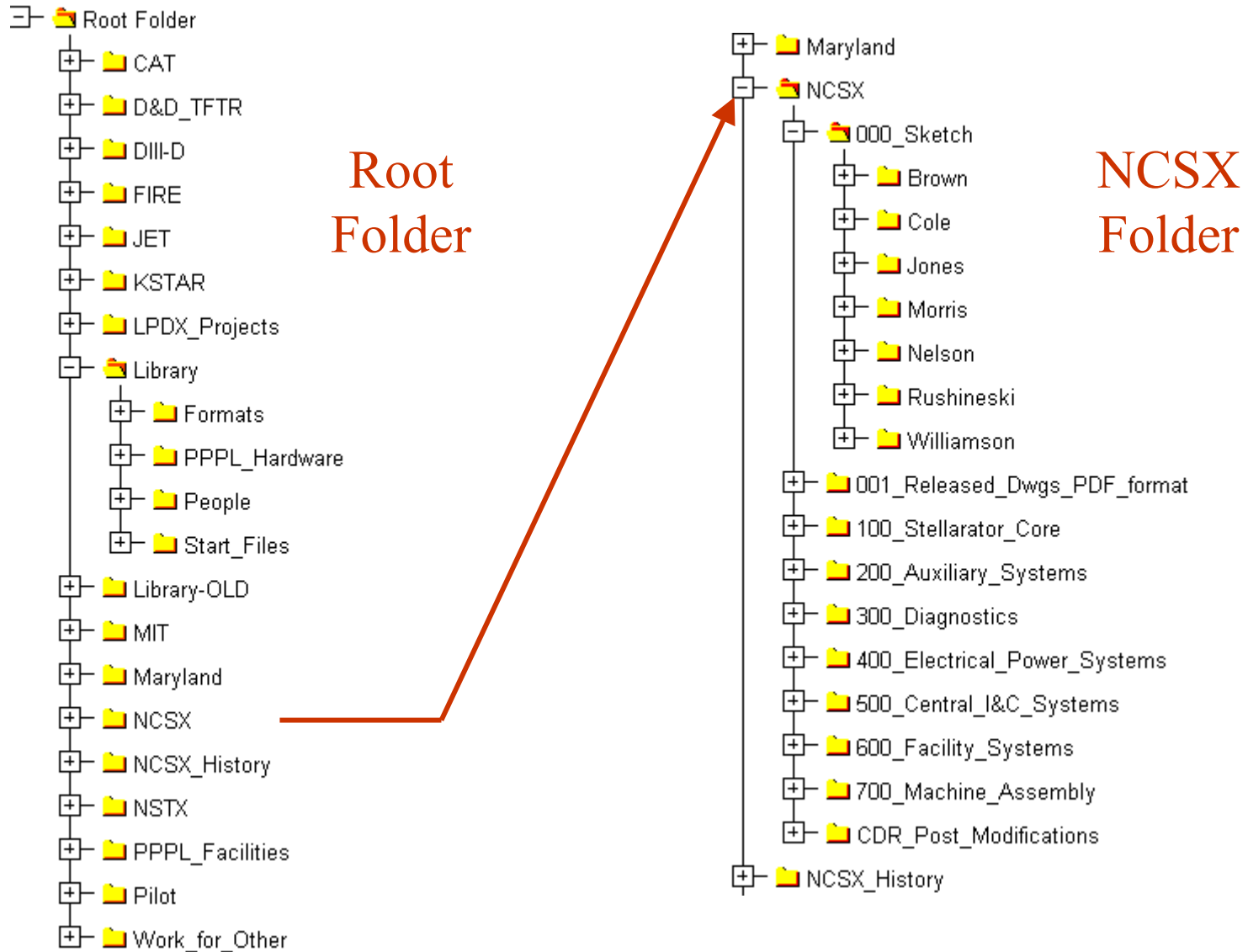# Pro/E and INTRALINK Use and Training

T Brown, M Cole

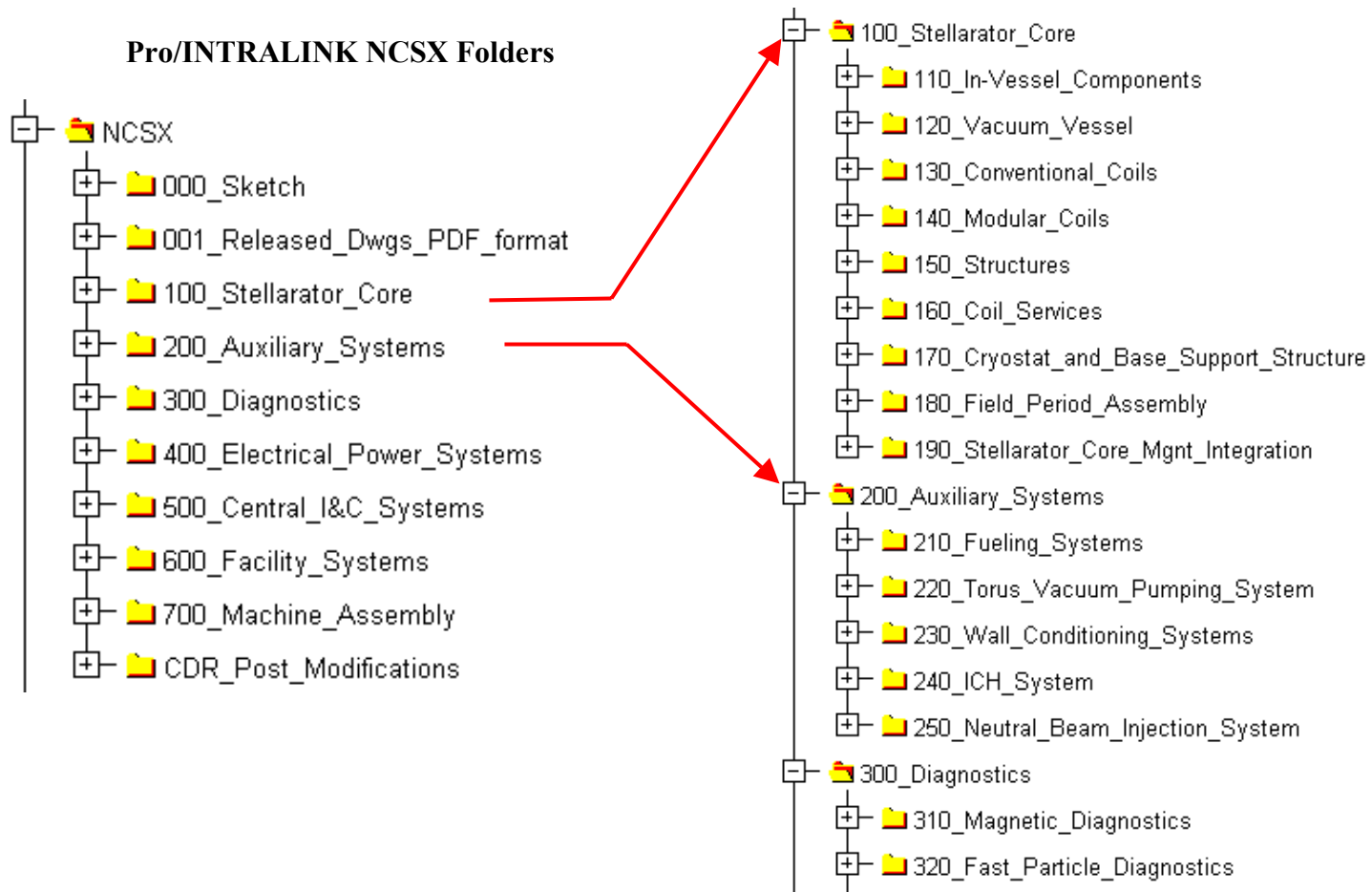NCSX Project Meeting

Wednesday, July 24

Working with ProEngineer, ProINTRALINK is a data management tool that allows users to collaborate, track design iterations, relationships, configuration changes and store data in a central database.

By defining object types (.drw, .dxf, .xls, .pdf,…) you can use INTRALINK to store, manage and launch all types of files.

INTRALINK Folder Structure

Root
Folder

NCSX
Folder

The NCSX Folder Scheme Follows the Project WBS Structure

Pro/INTRALINK NCSX Folders

- NCSX
  - 000_Sketch
  - 001_Released_Dwgs_PDF_format
  - 100_Stellarator_Core
  - 200_Auxiliary_Systems
  - 300_Diagnostics
  - 400_Electrical_Power_Systems
  - 500_Central_I&C_Systems
  - 600_Facility_Systems
  - 700_Machine_Assembly
  - CDR_Post_Modifications

- 100_Stellarator_Core
  - 110_In-Vessel_Components
  - 120_Vacuum_Vessel
  - 130_Conventional_Coils
  - 140_Modular_Coils
  - 150_Structures
  - 160_Coil_Services
  - 170_Cryostat_and_Base_Support_Structure
  - 180_Field_Period_Assembly
  - 190_Stellarator_Core_Mgnt_Integration
- 200_Auxiliary_Systems
  - 210_Fueling_Systems
  - 220_Torus_Vacuum_Pumping_System
  - 230_Wall_Conditioning_Systems
  - 240_ICH_System
  - 250_Neutral_Beam_Injection_System
- 300_Diagnostics
  - 310_Magnetic_Diagnostics
  - 320_Fast_Particle_Diagnostics

NCSX Drawing Numbering System

Typical No.:   S 0 4 E 1 2 3 – 0 0 1

S   Defines the stellarator project (NCSX)

04   Defines the system concept number (eliminated with the start of PD).

123 WBS defined numbers. Following the 3rd level WBS designation is optional.

001 Drawing numbers. For mechanical numbers. 0 thru 10 saved for top level assemblies.

To obtain a number an engineer/designer/drafter takes the next number in the Commonspace folder being worked in and saves the object to Commonspace. Temporary "Sketch" names can also be used and later changed to an official number.

PPPL INTRALINK RELEASE LEVELS

Conceptual Design

Preliminary Design

Prototype

Final Design
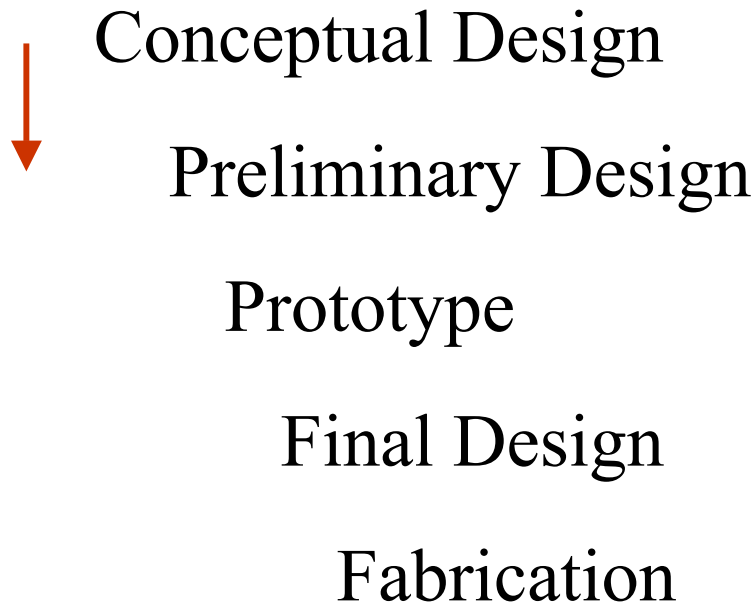
Fabrication

Drawings stay at Rev 0 until released to Fabrication.

Drawings will show Release level and INTRALINK version number.

Release Level Release Procedure

Each INTRALINK folder will have a predefined set of release procedures, typically approvals will be made by the level 1 WBS manager and sub level WBS managers.

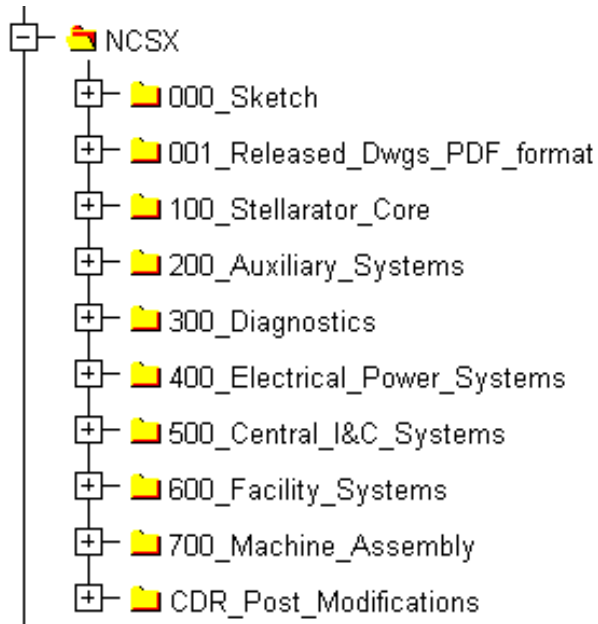Conceptual Design

Preliminary Design

Prototype

Final Design

Fabrication

Anyone can promote, designated WBS managers can approve.

Release Scheme Promotion Authorization

Pro/INTRALINK NCSX Folders

NCSX
- 000_Sketch
- 001_Released_Dwgs_PDF_format
- 100_Stellarator_Core
- 200_Auxiliary_Systems
- 300_Diagnostics
- 400_Electrical_Power_Systems
- 500_Central_I&C_Systems
- 600_Facility_Systems
- 700_Machine_Assembly
- CDR_Post_Modifications

WBS ORGANIZATON		WBS managers	
Stellarator Core Systems		**Nelson**	
VV and In-Vessel Components		Goranson	
Coil Systems		Williamson	
Modular Coils			Williamson
Convensional Coils			Kalish
Coil Support Structure			Feder
Coil Services			?
Cryostat and Base Structure		?	
Cryostat			Gettelfinger
Base Structure			Kalish
Field Period Assembly		Chrzanowski	
Auxiliary Systems		**Dudek**	
Diagnostics		Johnson	
Fueling Systems		Blanchard	
Vacuum Pumping		Blanchard	
Wall Conditioning		Blanchard	
Neutral Beams		Stevenson	
Cryogenic System		Gettelfinger	
Electrical Power		Ramakrishman	
Central I&C		Oliaro	
Water Systems		Dudek	
Utility Systems		Dudek	
Bakeout Systems		Kalish	
Test Cell Prep and Machine Asmbly		**Perry**	

Release Scheme

CD / PD / Prototype / FD /Fabrication

Typical INTRALINK Common Space Display

Object Display Bookmarks Tools Reports Help

Refresh Check Out Info BOM

Folders:

- Library-OLD
- MIT
- Maryland
- NCSX
- NCSX_History
  - C640
  - CDR
    - 000_Sketch
    - 100_Fusion_Core
    - 110_PFC
    - 120_VV
    - 130_TF
    - 140_PF
      - **141_OH_Solenoid**
      - 142_Ring_Coils
      - 143_PF_Power_Cooling
    - 150_Cryostat
    - 160_Support_Structure
    - 170_Modular_Coils
    - 180_Trim_Coils
    - 190_LN2_Dist_System_inside_cryostat
    - 200_Aux_Systems
    - 300_Diagnostics
    - 400_Power_Systems
    - 600_Site_and_Facilities
    - 700_Machine_Assembly
  - L_eq_3
  - Mod_Coils_1017_opt2
  - Mod_Coils_82

Contents of Folder: Root Folder/NCSX_History/CDR/140_PF/141_OH_Solenoid   Table Display: Default

?	Name	Description	Revision	Version	Release Level	Created By	C
	s17e141-001.asm	PF-1 & PF-2 SOLENOID/HUB ASSEMBLY	0	10	Conceptual	mcole	Locked by us
	s17e141-005.asm	PF-1 & PF-2 STACKED ASSEMBLY	0	9	Conceptual	mcole	Locked by us
	s17e141-009.asm	PF-1 COIL ASSEMBLY WITH LEADS	0	9	Conceptual	mcole	Locked by us
	s17e141-013.prt	PF-2 TUBE	0	7	Conceptual	tbrown	Locked by us
	s17e141-015.asm	PF-2 COIL ASSEMBLY WITH LEADS	0	7	Conceptual	tbrown	Locked by us
	s17e141-016.prt	PF-2 TUBE	0	7	Conceptual	tbrown	Locked by us
	s17e141-037.prt	LAYER #1 BARE COPPER WINDING	0	5	Conceptual	tbrown	Locked by us
	s17e141-038.prt	LAYER #1 WINDING INSULATION	0	5	Conceptual	tbrown	Locked by us
	s17e141-039.asm	LAYER #1 INSULATED WINDING	0	5	Conceptual	tbrown	Locked by us
	s17e141-040.prt	LAYER #2 BARE COPPER WINDING	0	1	Conceptual	mcole	Locked by us
	s17e141-041.prt	LAYER #2 WINDING INSULATION	0	1	Conceptual	mcole	Locked by us
	s17e141-042.asm	LAYER #2 INSULATED WINDING	0	6	Conceptual	tbrown	Locked by us
	s17e141-043.prt	LAYER #3 BARE COPPER WINDING	0	1	Conceptual	mcole	Locked by us
	s17e141-044.prt	LAYER #3 WINDING INSULATION	0	1	Conceptual	mcole	Locked by us
	s17e141-045.asm	LAYER #3 INSULATED WINDING	0	6	Conceptual	tbrown	Locked by us
	s17e141-046.prt	LAYER #4 BARE COPPER WINDING	0	1	Conceptual	mcole	Locked by us
	s17e141-047.prt	LAYER #4 WINDING GROUNDWRAP	0	1	Conceptual	mcole	Locked by us
	s17e141-048.asm	LAYER #4 INSULATED WINDING	0	6	Conceptual	tbrown	Locked by us
	s17e141-049.asm	PF-1 / PF-2 COIL/GROUNDWRAP ASSEMBLY	0	10	Conceptual	mcole	Locked by us
	s17e141-049.drw		0	0	Conceptual	rushinsk	Locked by us
	s17e141-050.asm	PF-1 & PF-2 COIL WINDING ASSEMBLY	0	8	Conceptual	mcole	Locked by us
	s17e141-051.prt	LAYER #1 /LAYER #2 TRANSITION COPPER	0	5	Conceptual	tbrown	Locked by us
	s17e141-052.prt	LAYER #1 /LAYER #2 TRANSITION INSULATION	0	5	Conceptual	tbrown	Locked by us
	s17e141-053.asm	LAYER #1 /LAYER #2 TRANSITION	0	6	Conceptual	tbrown	Locked by us
	s17e141-054.prt	LAYER #2 /LAYER #3 TRANSITION COPPER	0	5	Conceptual	tbrown	Locked by us
	s17e141-055.prt	LAYER #2 /LAYER #3 TRANSITION INSULATION	0	5	Conceptual	tbrown	Locked by us
	s17e141-056.asm	LAYER #2 /LAYER #3 TRANSITION	0	6	Conceptual	tbrown	Locked by us
	s17e141-057.prt	LAYER #3 /LAYER #4 TRANSITION COPPER	0	5	Conceptual	tbrown	Locked by us
	s17e141-058.prt	LAYER #3 /LAYER #4 TRANSITION INSULATION	0	5	Conceptual	tbrown	Locked by us
	s17e141-059.asm	LAYER #3/ LAYER #4 TRANSITION	0	6	Conceptual	tbrown	Locked by us
	s17e141-061.prt	LAYER #1 /LAYER #2 INSULATING SHEET	0	5	Conceptual	tbrown	Locked by us
	s17e141-062.prt	LAYER #2 /LAYER #3 INSULATING SHEET	0	5	Conceptual	tbrown	Locked by us
	s17e141-063.prt	LAYER #3 /LAYER #4 INSULATING SHEET	0	5	Conceptual	tbrown	Locked by us
	s17e141-065.prt	LAYER #4 LEAD	0	7	Conceptual	tbrown	Locked by us
	s17e141-066.prt	LAYER #1 LEAD	0	7	Conceptual	tbrown	Locked by us
	s17e141-067.prt	PF-1 & PF-2 COILS GROUNDWRAP	0	9	Conceptual	mcole	Locked by us
	s17e141-068.prt	PF-1 TUBE GROUNDWRAP DETAIL	0	7	Conceptual	tbrown	Locked by us
	s17e141-069.asm	PF-1 TUBE & GROUNDWRAP	0	7	Conceptual	tbrown	Locked by us
	s17e141-070.asm	OH HUB ASSEMBLY	0	8	Conceptual	tbrown	Locked by us

In addition to Revision number, the Release Level and Version number is added to the drawing format automatically to indicate the drawing release status.

I	P99B100-011	SUPPORT BLOCK	SS	
ITEM NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD

PARTS LIST

RELEASE LEVEL: Conceptual

VERSION NO: 0†

weight=3444.7 lbs

DATE:

WELDING ENGINEER

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED

Pro E

CENTRAL FILES:

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES MACHINE SURFACES

TOLERANCES NON-CUMULATIVE

NEXT ASSEMBLY

DECIMAL-INCH | FRACTIONS

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
XXXXXXXXXXXXXXXXXXX
SUPPORT BLOCK

DIV. MECH. ENG.

ENG.   T BROWN

DSN.   T BROWN

CHK:

P99B100-011

SHEET 1 OF 1 | REV 0
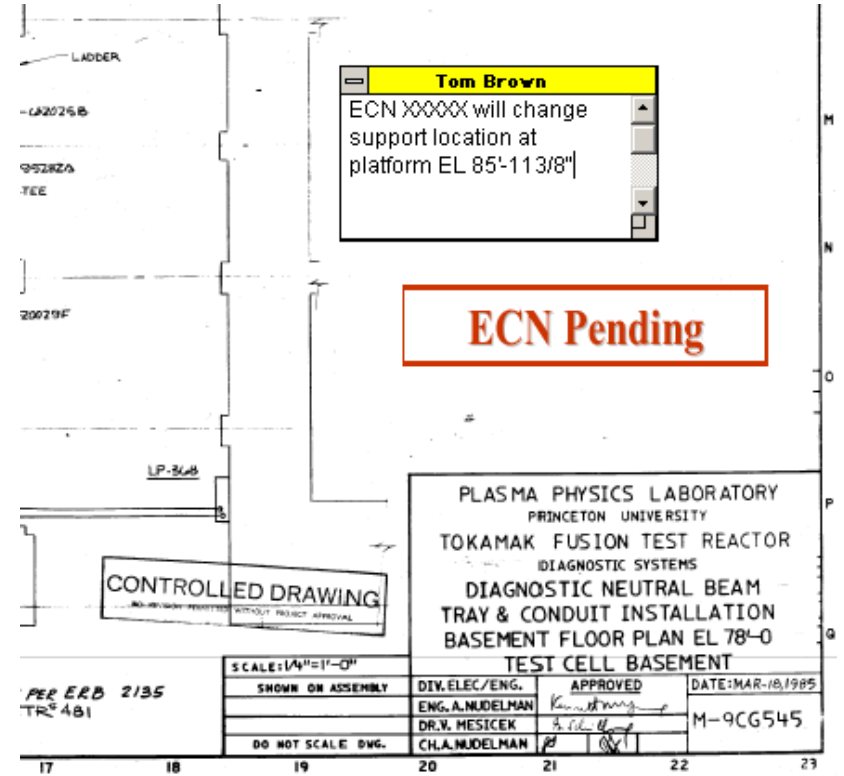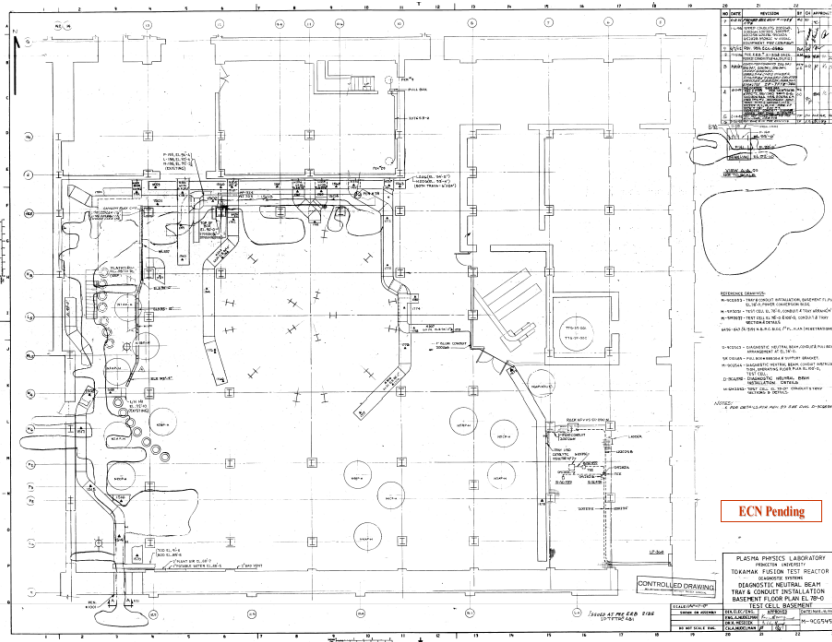
Release Level and Version No.

Rev No.

What files would be stored in INTRALINK?

INTRALINK can store many document types.

One option is to store all files under configuration control. This would include all CAD models and drawings, specification documents, interface control documents, etc..

Also, a released drawing folder will collect E-size pdf files of all released drawings. Write access will be restricted to one individual.

Signed drawing released to Fabrication. Scanned TIF file converted to pdf and stored in the "read only" 001_Released_Dwg_PDF_Format folder of INTRALINK

If a change is required for an approved drawing a customized Acrobat stamp stating "ECN Pending" can be placed on the drawing. Expanding the note will summarize the ECN.

Training for ProINTRALINK and ProEngineer				
ProINTRALINK		**ProEngineer**	User Type	
Hutch Neilson		Hutch Neilson		
Bob Simmons		Bob Simmons		
Phil Heitzenroeder		Phil Heitzenroeder		
Wayne Reiersen		Wayne Reiersen	2	
Jim Chrzanowski		Jim Chrzanowski		
Erik Perry		Erik Perry		
Larry Dudek	Mac	Larry Dudek		
Judy Malsbury		Judy Malsbury	1	
Frank Malinowski		Frank Malinowski	1	
Dave Johnson		Dave Johnson		
Russ Feder		Russ Feder	4	
Geoff Gettelfinger		Geoff Gettelfinger		
Lane Roquemore		Lane Roquemore		
Mike Kalish		Mike Kalish	3 - 4	
Bill Blanchard		Bill Blanchard	2	
Tim Stevenson		Tim Stevenson		
Henry Kugel		Henry Kugel		
Bob Ellis		Bob Ellis	3	
Steve Raftopoulos		Steve Raftopoulos		
Doug Loesser		Doug Loesser		
Charlie Neumeyer		Charlie Neumeyer	2	
Art Brooks		Art Brooks	2 - 3	
Raki Ramakrishman	Electrical			
Jerry Siegel				
Rick Van Kirk				
Jim Nelson				
Frank Jones				
Don McBride				
Dick Debonis				

Training for Pro/INTRALINK and ProEngineer

Note: We believe it's possible to access INTRALINK using a Mac by running a PC emulator.

User type designation for ProEngineer				
(0) No interest in knowing how to use the PorEngineer CADD software.				
(1) Viewer. Views models and drawings.				
(2) Novice. Develops simple concept models and some drawing details.				
(3) Expert. Can use many features of ProE; develops detail models and drawings.				
(4) Master. Masters ProE. Develops complex models with NCSX type surfaces/geometries as well				
as drawing details. Also can use ProMechanica to develop FEA models/analysis.				