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Operations - Regulatory Framework, Radiation Safety, LANSCCE Shielding Policy, Protective Systems

**Visit to LANL by European Spallation
Source (ESS) Licensing and Safety Staff**

February 4 – 6, 2013

Department Of Energy Order on Safety of Accelerator Facilities

DOE O 420.2C
7-21-2011

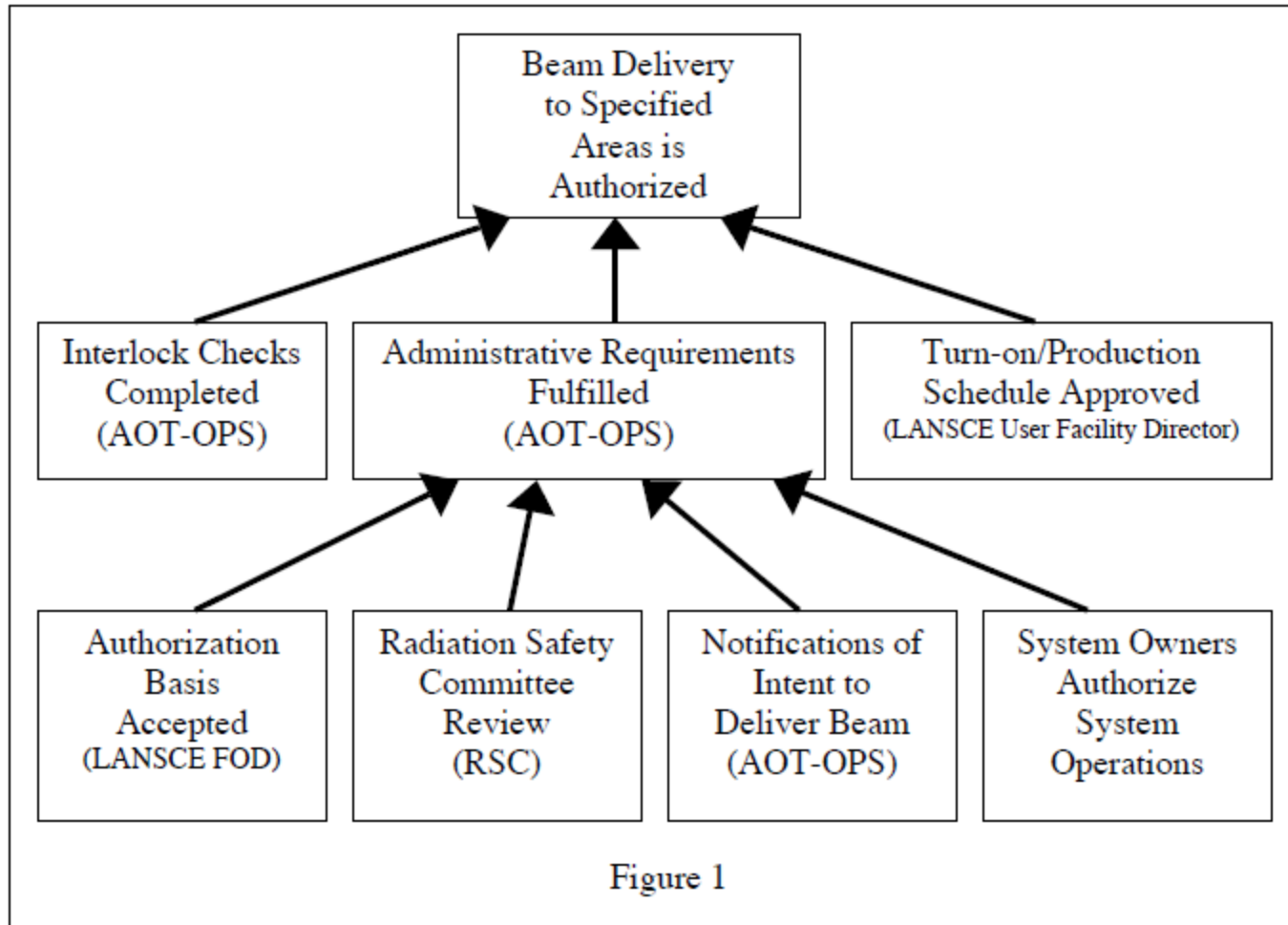
3

- b. The following elements must be included in accelerator safety programs:
- (1) an approved accelerator safety envelope (ASE);
 - (2) a safety assessment document (SAD);
 - (3) clearly defined roles and responsibilities for accelerator activities including those for training and procedures;
 - (4) an unreviewed safety issue (USI) process. A USI process supports configuration management efforts that helps ensure the facility and supporting safety documentation are maintained current and periodically updated;
 - (5) an accelerator readiness review (ARR) program that ensures facilities are adequately prepared for safe commissioning and/or operations; and
 - (6) a current listing/inventory of accelerators under this Order and exemptions or equivalencies granted in accordance with paragraph 3.c.(2) and 3.c.(3) of this Order.

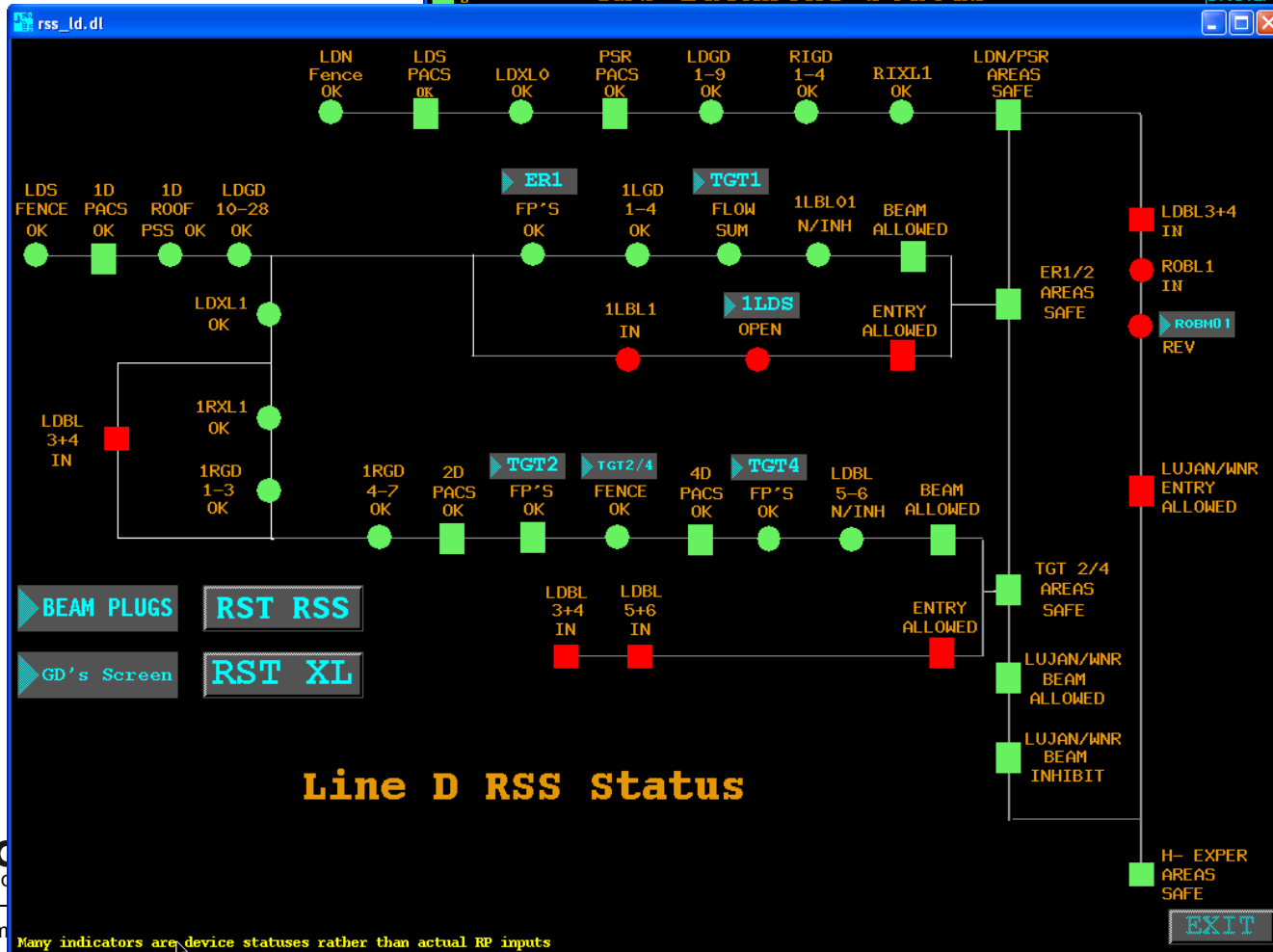
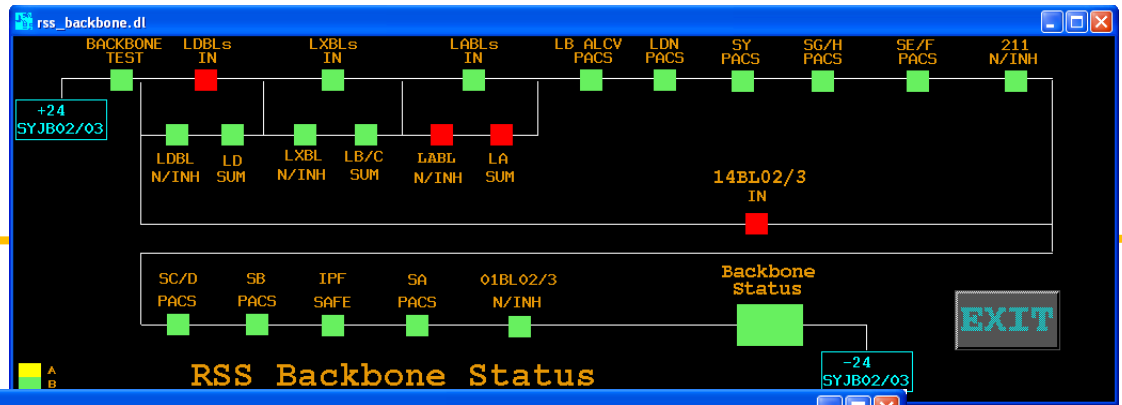
Selection of Credited Controls (SAD Vol. I Table 4-23)

Control	Type of Control	P or M	Safety Function	Applicable Hazard
- Shielding and structures	- Design Feature	- M	<p>The structure of the injector rooms, LINAC Sectors, and beamline tunnels serves as shielding to protect the worker (and by doing so also protects the public and the environment) from prompt radiation exposure and protect the worker from external radiation exposure to activated materials.</p> <p>The structure of the injector rooms and the LINAC Sector A tunnel also serves as shielding to protect the worker against radio frequency (RF), X-ray, and microwave radiation.</p>	<ul style="list-style-type: none"> - Prompt Radiation - External Radiation - Radioactive Material - Protects assumptions in HA
- Radiation Security System	- Engineered Control	- M	- The RSS is required to protect the worker from the radiation hazards created by accelerator operations, thereby preventing serious worker injury or death.	- Prompt Radiation
- Prompt radiation protection and shielding policy	- Safety Management Program	- P and M	- Ensures ionizing radiation protection for the worker, the public, and the environment.	- Prompt Radiation
- Sweep/Entry Procedures	- Administrative Control	- P	- The primary safety function of the flight-path sweep and entry procedure is to protect the worker from very high prompt and external radiation doses, thereby preventing serious worker injury or death.	<ul style="list-style-type: none"> - Prompt Radiation - External Radiation

The Authorization Process and its Elements



RSS Inputs



Credited Engineering Controls



Surveillance Database

09/23/2012 23:21:38

Mode/Area Summary Table				
Operable?	Mode/Area	Passed?	In Jeopardy?	Expired?
● YES	01BL Mode	YES	NO	NO
● YES	211 & IPBL Mode	YES	NO	NO
● YES	IPF Target Mode	YES	NO	NO
● YES	800 MeV Mode	YES	NO	NO
● YES	LXBC Mode	YES	NO	NO
● YES	LD/PSR Mode	YES	NO	NO
● YES	LD to WNR & PSR To WNR Mode	YES	NO	NO
● YES	LD & PSR To 1L Target Mode	YES	NO	NO
● YES	Area A	YES	NO	NO
● YES	Area B	YES	NO	NO
● NO	Lujan Center	YES	YES	● YES


Update by Procedure Number ▾

Show Surveillances:

By Mode/Area ▾

By Jeopardy Window ▾

By Expiration Window ▾



Surveillance Database Search Results

For Mode: 211_IPBL Area: PBL

Surveillance Requirement	Description	Procedure	Last Performed Date/Time	Interval	Due Date/Time	Additional Interval	Expires	Note
3.1.1.2.B	14BL02 and 14BL03 operability check	6.18.A	05/31/12 18:47	184 Days	12/01/12 18:47	46 Days	01/16/13 18:47	Empty
3.1.1.2.B	IPBL02 and IPBL03 operability check	6.18.B	09/20/12 13:48	184 Days	03/23/13 13:48	46 Days	05/08/13 13:48	Empty
3.1.1.2.C	211 MeV Mode RSS Backbone check	6.16.A	06/01/12 12:30	184 Days	12/02/12 12:30	46 Days	01/17/13 12:30	Empty
3.1.1.2.D	Sector A PACS check	6.4.2.A	09/20/12 13:39	184 Days	03/23/13 13:39	46 Days	05/08/13 13:39	Empty
3.1.1.2.D	Sector B PACS check	6.4.2.B	09/20/12 13:45	184 Days	03/23/13 13:45	46 Days	05/08/13 13:45	Empty
3.1.1.2.D	Sectors C/D PACS check	6.4.2.C	08/14/12 18:34	184 Days	02/14/13 18:34	46 Days	04/01/13 19:34	Empty

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Radiation Security System (RSS) – Presentation by Mike Hall is available

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- LA-UR-96-3568 LANSCE Radiation Security System

LA-UR-96-2047 LANSCE Personnel Access Control System