

Santa Susana Field Laboratory Special Exposure Cohort/Site Profile Update

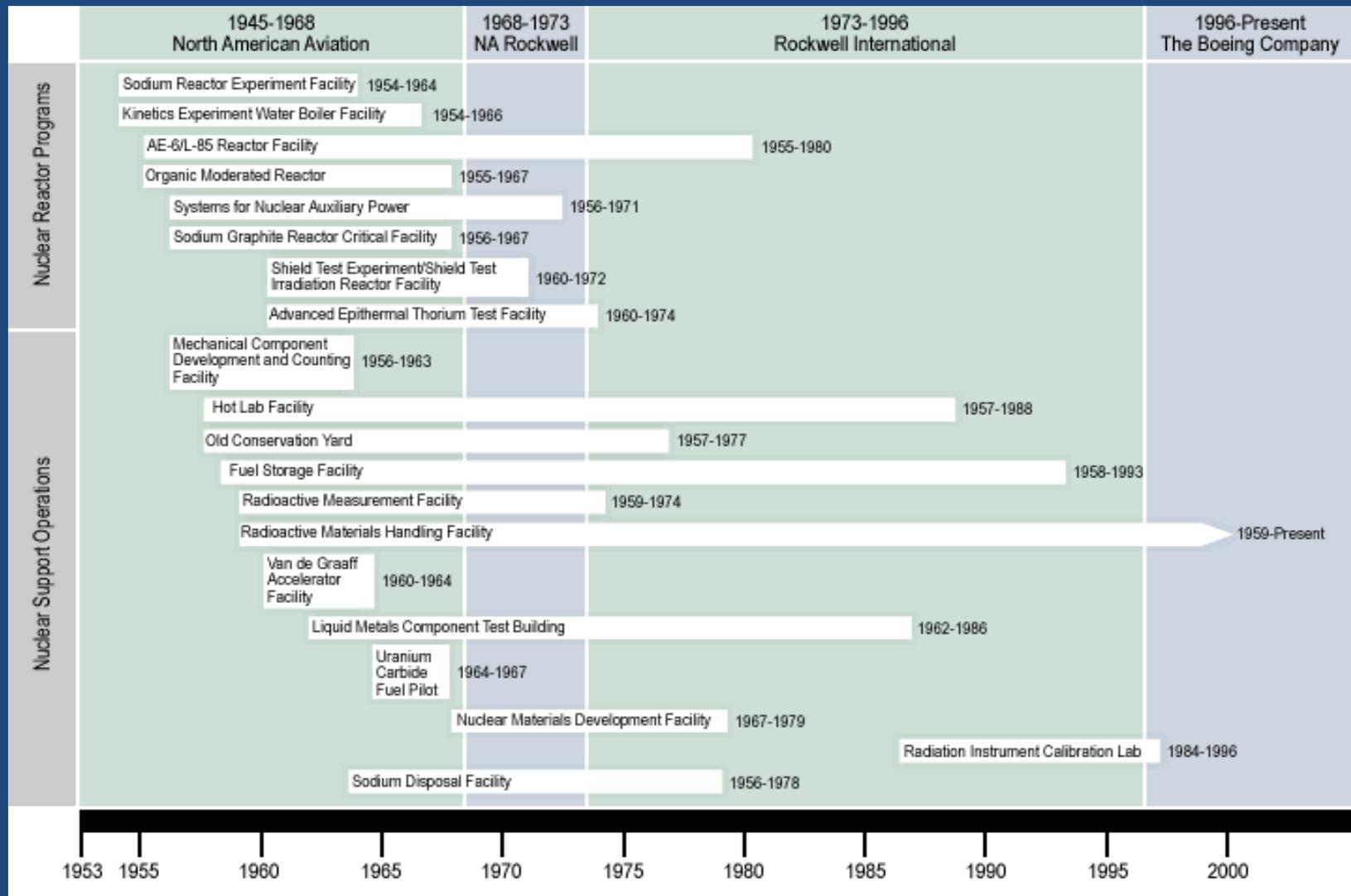
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Background

- **Area IV of the Santa Susana Field Laboratory (SSFL)**
 - Covered Period: 1955 – present
 - Two Special Exposure Cohort (SEC) classes: 1955 – 1964
- **Canoga Avenue Facility**
 - Covered Period: 1955 – 1960
 - SEC class: 1955 – 1960
- **DeSoto Avenue Facility**
 - Covered Period: 1959 – 1995, 1998
 - SEC class: 1959-1964
- **Downey Facility**
 - Covered Period: 1948-1955
 - SEC Class: 1948-1955



Historical Site Assessment of the Area IB Santa Susana Field Laboratory Ventura County, California, Volume 1 – Methodology Prepared by Sapere Consulting Inc. and The Boeing Company for the Department of Energy under contract DE-AC03-99SF21530, May 2005.

Work Group History

- Met in 2008, 2009, 2010, and Oct. 16, 2014
- SEC Evaluation Reports (ERs) delivered, 2009 and 2010
- Board contractor reviewed Technical Basis Document (TBD) , Area IV ER in 2008 and 2009

Issues Discussed

- Site definition and operations timeline
- Incidents
- Internal monitoring issues, internal coworker model
- External monitoring issues, external coworker model
- Neutron approach/NTA film data
- Environmental approach from stack releases
- Tritium plumes

Dates and Documents

- **Documents in discussion**
 - Neutron-Photon ratio white paper (June 14, 2010)
 - Internal Coworker Model - ORAUT-OTIB-0080 (March 14, 2014)
- **NIOSH draft documents to release**
 - External Coworker Model - ORAUT-OTIB-0077
 - TBD revisions to include most recent guidance on neutrons, coworker models and environmental approach

NIOSH work since 2010

■ 2010

- Continuing discussion and issue resolution with internal data
- NIOSH negotiating with Boeing trying to obtain SSFL scanned dosimetry records to complete coworker models
- NIOSH analyzes neutron/photon data and releases white paper with n/p approach
- Internal, external and environmental TBDs were revised, mainly to include SEC language

NIOSH work since 2010 (cont.)

■ 2011

- Continuing negotiation with Boeing about scanned records and data base information
- NIOSH discovers issue with Boice data base and abandons using it for coworker studies
- NIOSH drafts revised versions of SSFL TBDs but they remain pending resolution of issues with coworker studies

NIOSH work since 2010 (cont.)

■ 2012

- Boeing decides to release scanned records of worker dosimetry files in January
- NIOSH ORAU receives data 3/7/2012, consisting of over 14,000 files
- Data entry and coworker model development take place from May 2012 to January 2013

NIOSH work since 2010 (cont.)

■ 2013

- Internal and external coworker models completed and reviewed
- External model is pending approval awaiting issue resolution on neutrons

■ 2014

- OTIB-0080 – internal coworker model approved 03/2014
- Issue resolution of OTIB-0077 restarted (neutron approach)

Coworker models overview

- **Internal (OTIB-0080)**
 - Plutonium model – 1965-1986
 - Uranium model – 1965- 1988
 - Gross beta model - 1965-1991
- **External (OTIB-0077 – draft)**
 - 175,024 data points
 - Sitewide model: photon, electron, neutron
 - Area IV model: photon, electron
 - DeSoto model: photon, electron

Neutron Photon Ratio

- Bounding approach for unmonitored neutrons
- Time span: 1956-1987
- 1180 Paired neutron and photon measurements around reactor facilities analyzed
- Lognormal fit to data
- Site wide neutron photon ratio of 1.73 with a GSD of 2.76

Neutron Approach

- Site wide/unknown work location: use n:p ratio
- Accelerator exposure: use NTA film with correction factor
- Reactor exposure: use n:p ratio as indicated in NIOSH white paper
- Fuel handling: research indicates that SSFL reactor n:p ratio is bounding

Path Forward

- Issue External Coworker Model
- Incorporate neutron guidance in revised TBDs
- Issue resolution with SC&A regarding coworker models and neutron approach
- Remaining SEC issues
- Remaining Site Profile issues

Questions?

