CAS/CAIS Users Group Meeting

Lawrence Livermore National Laboratory (LLNL)

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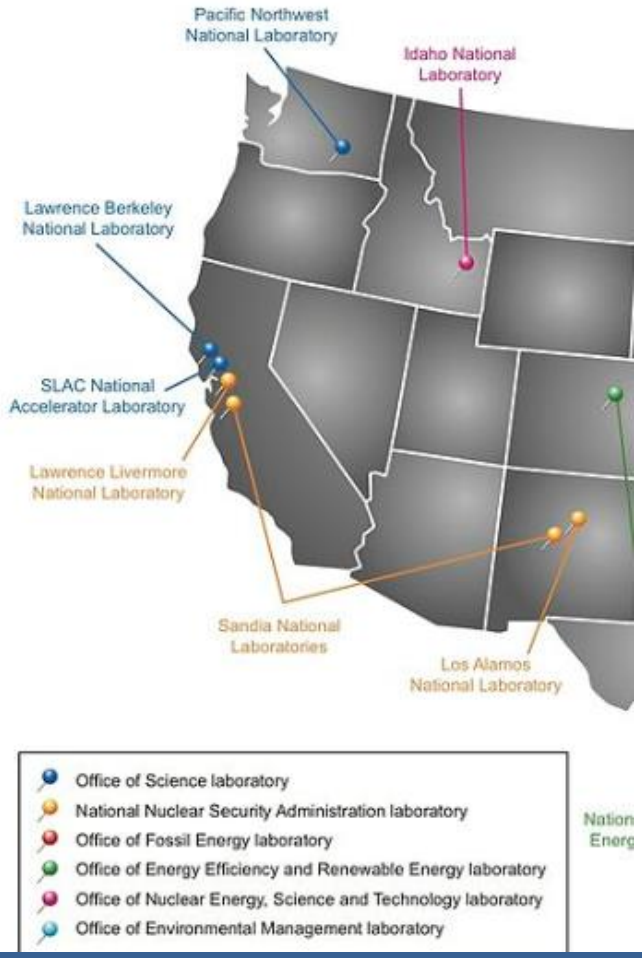
LLNL is a Multidisciplinary National Security Laboratory



- Established in 1952
- Approximately 6,000 employees
- 7 million gross square feet, 688 assets
- Annual federal budget: ~ $1.5B

Although we are an NNSA site, we also have EM and SC facilities

LLNL Program History at LLNL

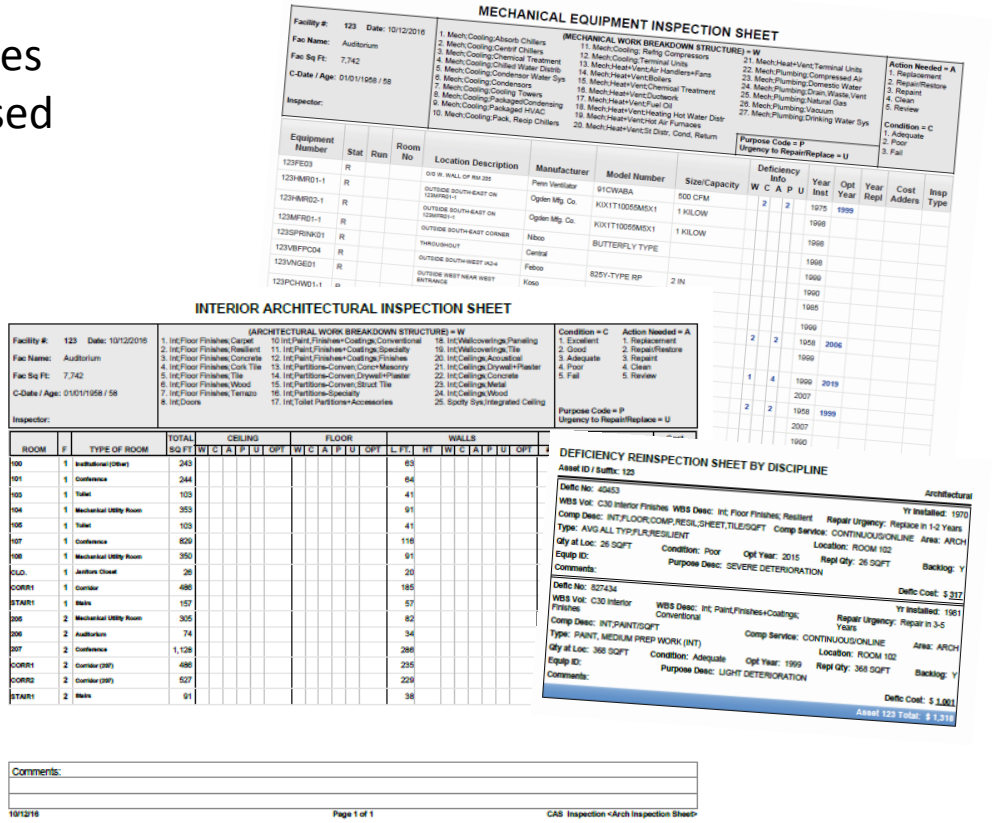
- Began in the early-1990s
- Established a dedicated “CAS Inspection Group”
- Integrated CAS/CAIS into facilities operations and maintenance systems
- Developed, created, and standardized a deficiency identification, ranking and prioritization processes

We are constantly self-evaluating our processes for efficiencies and improve data quality

At LLNL, we have integrated CAIS into our CMMS system to generate inspections

When generated, each inspection provides useful information to each **discipline**-based inspector:

- Current facility contacts
- Tailored inspection requirements
- Latest MEL information
- Current active deficiencies



MECHANICAL EQUIPMENT INSPECTION SHEET

INTERIOR ARCHITECTURAL INSPECTION SHEET

DEFICIENCY REINSPECTION SHEET BY DISCIPLINE

In August, LLNL migrated to DOE-CAIS

For the first time, LLNL is now with the rest of the DOE sites using CAIS

Facility component deficiencies are annually ranked and prioritized

Provided by client (by component)

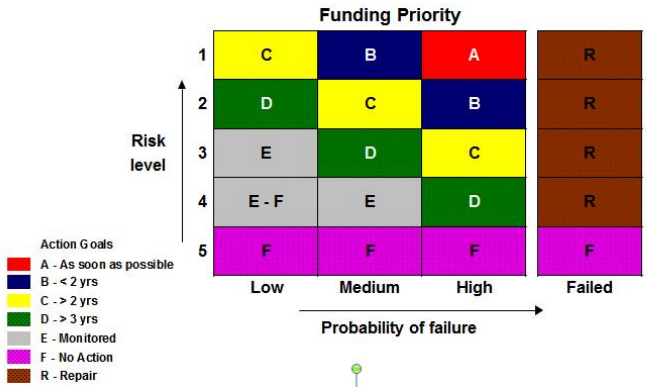
Programs determine the Priority Risk Level (PRL) rank

1	Mission shutdown – Failure of system and/or component will shut down program until system/component reactivated or failure will result in serious ES&H or Security issues. Ex: Shut down would result in significant financial or programmatic damage.
2	Significant Mission delay – Failure of system and/or component will significantly reduce program's ability to perform mission or failure may result in serious ES&H or Security issues. Ex: Limited shut down of major function or any condition that has a high probability of leading to a serious personal injury.
3	Moderate Mission delay – Failure of system and/or component may reduce program's efficiency in performing mission or may result in a minor ES&H or Security issue and may be deferred for a limited time. Ex: Equipment needed to maintain acceptable working conditions.
4	Minor Mission delay – Failure of system and/or component will have minor impact on the ability of the program to perform mission, and deferrable within current mission requirements. Ex: Flooring, interior painting, creature comforts.
5	No Mission delay – No corrective action required. Items are ranked here only if abandoned in place, no longer needed and/or inoperable. No maintenance or replacement would be done if it fails.

CAIS data elements: used: Condition, Urgency , and Purpose

Algorithm is used for POF validation

Probability of Failure	Probability of Failure Description	Algorithm
H	High	-condition is fail -condition is poor and the urgency is repair immediately or repair within 1 year or replace within 1 year -condition is poor and the purpose is severe deterioration or parts not available -any service description other than not in service or not connected or missing/not located
M	Medium	-condition is poor and the urgency is repair in 1-2 years or replace in 1-2 years -condition is poor and the urgency is repair in 3-5 years or replace in 3-5 years and the purpose is light deterioration or moderate deterioration -condition is adequate and urgency is repair in 3-5 years or replace in 3-5 years and purpose is moderate deterioration or severe deterioration -condition is adequate and the urgency is repair in 1-2 years or replace in 1-2 years -any service description other than not in service or not connected or missing/not located
L	Low	-condition is good -condition is adequate and the urgency is repair in 3-5 years or replace in 3-5 years -condition is poor and the urgency is repair in 3-5 years or replace in 3-5 years and the purpose is code violation or exceeded design life or functional Improvement or maintenance or efficiency -purpose is functional Improvement or maintenance or code compliance and condition is adequate - purpose is functional improvement or maintenance or code compliance and condition is poor and urgency is repair in 3-5 years or replace in 3-5 years or repair in 1-2 years or replace in 1-2 years -urgency is no replacement and purpose is legacy -urgency is replace in 5-7 years -urgency is no repairs necessary -service description is either not in service or not connected or missing/not located



Ranking results are critical to make wise investment decisions

LLNL – CAIS Status Update

In CAIS, we currently have:

- ~ 18k Active Deficiencies in CAIS
- $541M Total Deferred Maintenance *
- $783M – Total Repair Needs in CAIS *

* as reported in FIMS , Sept 2016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