

# *What's New for Users at the NIF...*

NIF & JLF User Groups Meeting 2025

February 11, 2025

Kevin B. Fournier, *et al.*



# Outline

- Personnel changes
- Impact of scheduling changes in FY25 and beyond
- Shot RI training update
- Experimental Readiness timeline
- New approval step for experimental readiness checks
- Time-resolved diffraction and time-resolved opacity diagnostics

## Three changes in personnel that affect users -

- NIF User Office Administrator – Katie Mathisen has joined the team!
  - Katie has a key role in all NIF user-oriented events each year
  - Katie oversees the team that handles visit requests, travel support, proposal solicitation and public outreach
- T-3 week set up review – Travis Briggs has replaced Bob Ehrlich as coordinator
  - Bob Ehrlich has retired; Travis has fully assumed this role in a smooth transition from Bob with help from Greg Campbell
- TaLIS Expert Group – Dean Latray has retired; Nathan Masters is acting as TaLIS lead while a replacement is sought
  - This group evaluates every experiment for backscatter risk, unconverted light clearance risk, in-chamber collision avoidance, and the risk from debris and shrapnel in the target chamber.

# The planning basis for shot durations has been updated to better represent historical and expected durations

- We have added 40 minutes to the planned duration for every shot
  - This results in fewer scheduled shot opportunities with fewer dropped shots expected
- The recovery times following ignition yield shots have been updated
  - Higher yields require a longer post shot stay-out times

## Schedule basis up to FY24

Yield Bin	Add Hours
Yield > 1E15	10
Yield 1e16<Y<=3E17	12
Yield 3e17<Y	18



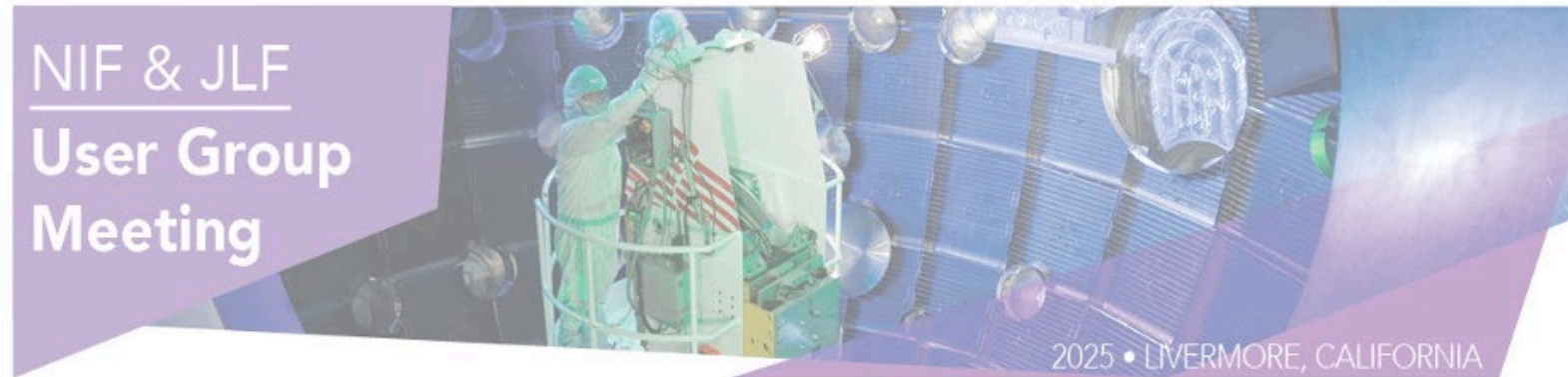
## Schedule basis starting in FY25

Yield Bin	Add Hours
Yield 1e16<=Y<2E16	10
Yield 2e16<=Y<4E17	12
Yield 4e17<=Y<2E18	16
Yield 2e18<=Y<4e18	35
Yield >=4e18	48

Scheduling points of contact: [Derrick Lasse \(lassle3\)](#), [Megan Francisco \(francisco6\)](#)

Shot durations will continue to be updated based on facility data and feedback from stakeholders

# NIF is aging and a dedicated effort has started to refresh and recover from ongoing degradation and end-of-life hardware and components



## ***Session 7: NIF Sustainment***

Chair: TBD

10:45 am

### ***General Sustainment ARC***

Brianna Arth, Lawrence Livermore National Laboratory

11:05 am

### ***Amplifier Refurbishment***

Matthew Jones, Lawrence Livermore National Laboratory

11:25 am

### ***Laser Performance Refreshes***

Larry Pelz, Lawrence Livermore National Laboratory

**Be sure to attend the NIF Sustainment session on Thursday to hear more about NIF sustainment**

# Shot RI training is undergoing an update

- Curricula refresh
  - Individual modules have been updated and additional courses added
  - We are reviewing consistency in guidance on experiment planning timelines
  
- Qual. card implementation
  - A formal sign-off process is planned
  - The intent is to ensure shot RIs have the knowledge needed to support the programs
  - To sign-up new RIs, contact Greg Campbell ([campbell92](mailto:campbell92)) or go to <https://lasers.llnl.gov/for-users/shot-ri-resources> and look for the “NIF Shot RI Training” link.

 <b>NIF OPERATIONS QUALIFICATION CARD TRAINING PACKAGE</b>	Course Number NP1314-OJT
	NIF-XXXXXXXXXX-AA
Title: NIF Shot Responsible Individual (RI) Training	Functional Area:
Trainee Name	Employee No.

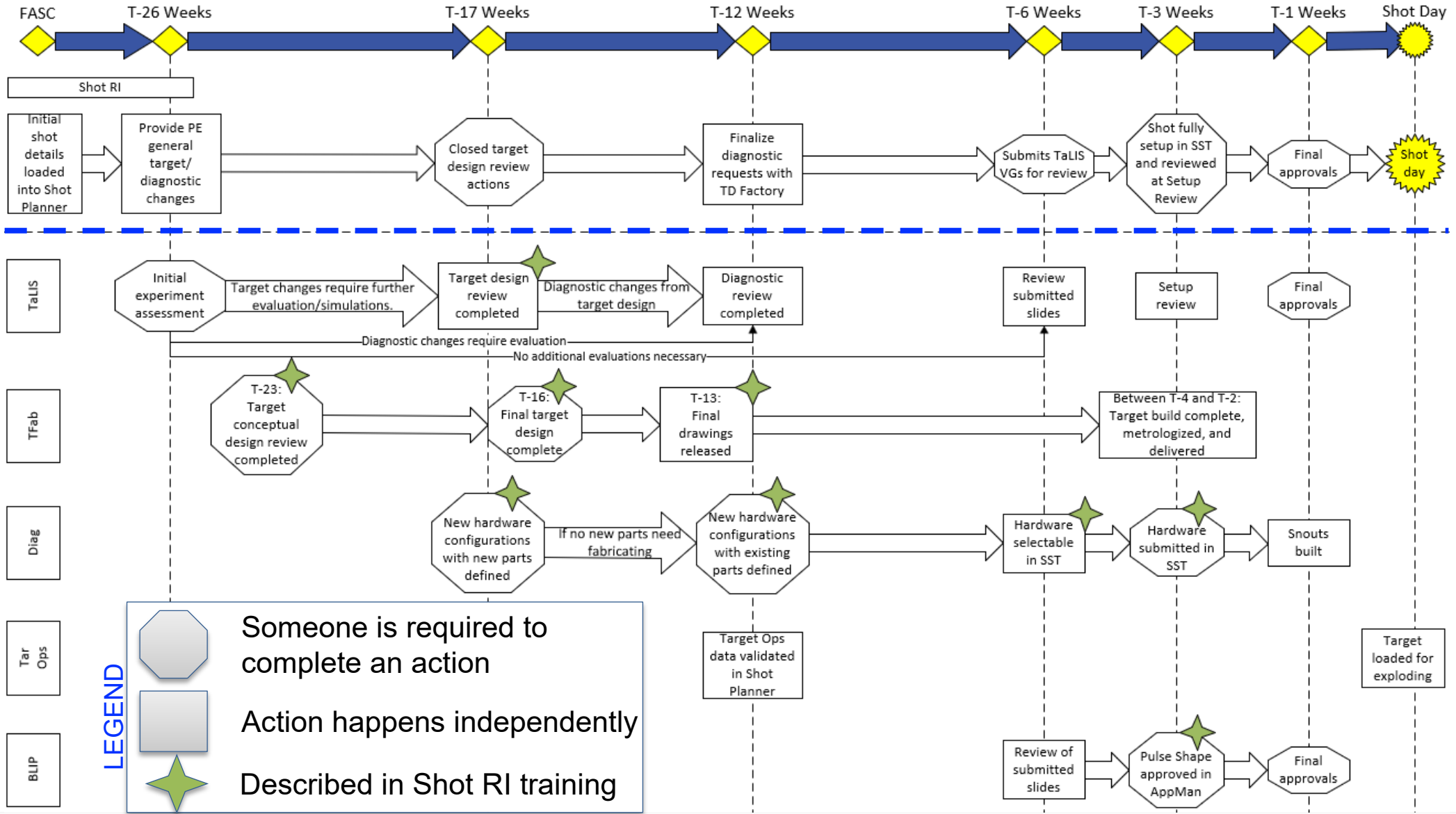
## QUALIFICATION INSTRUCTIONS

This Qualification Card (Qual Card) is divided into the following sections:

NP1314-A – NIF User Office and Shot RI Resources .....	2
NP1314-B – Introduction to Shot Setup Tool (SST), Shot Planning Tools, Visualization, and Data .....	3
NP1314-C – Laser Setup and Performance.....	4
NP1314-D – Target Fabrication Tools .....	5
NP1314-E – Introduction to NIF Shot Operations.....	6
NP1314-F – Introduction to Target Fielding .....	7
NP1314-G – Diagnostics, Factory, and Requirements Verification Process (RVP).....	8
NP1314-H – Alignment and Shot Observations.....	9
NP1314-I – Shot Planner and RevEx Review.....	10

# Experimental readiness timeline (work in progress)

EXPERT GROUPS



# A new approval required in Approval Manager for shot readiness

- Before the RI for a shot can give final approval allowing for the shot to be exported, a program-identified SST checker must “sign off” in AppMan.
  - This formalizes what has always been an expectation.
  - One more may of raising awareness of best practices.
- The SST check is an additional line of defense that helps ensure the shot RI gets the experiment that he or she desires.

The screenshot shows the NIF Approval Manager interface. At the top, it displays 'NIF Approval Manager 24.3.0.27669'. Below this is a search bar and a navigation menu with tabs for 'Exp', 'Summary', 'NOM/SCO', 'RI', 'BLIP', 'TaLIS', 'Facility', 'DLI', 'Tgt Sys', 'Tgt Diag', 'Ann/Att', and 'Admin'. The 'RI' tab is highlighted with a red box. Below the navigation menu, there is a table of experiments with columns for 'Experiment Name', 'Yield', 'Proposed Shot Date', 'Ops Approved Date', 'SCO Approved Date', and 'SST Validation Status'. The first row shows 'J\_Stage\_DT\_HyEHE\_S07' with a yield of '4E18' and a proposed shot date of '1/26/25'. The 'SST Validation Status' column shows a green bar and the text '1/26/25, 12:25 AM Revalidate'.

Target Export	NOM Approval		
01/16/2025 09:21:04 - vanwongerghem1	01/16/2025 15:25:39 - vanwongerghem1		
Experiment Level Data Group	Rev	Rej?	Submitted
RI Review			
BLIP	1		12/16/24 10:11
RI Laser Setup	1		12/16/24 10:11

A red arrow points to the 'RI Review' row in the table, with the text 'Insert SST Checker Here' next to it.

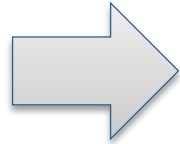




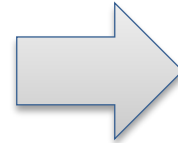
**Lawrence Livermore  
National Laboratory**

# Increase in experiment planned duration and impacts of aging facility result in fewer shots per year

344 shots  
scheduled in  
FY25



40 additional  
minutes added  
9.5 days worth of  
extra time



Equivalent to  
29 Warm  
Simple shots  
not scheduled

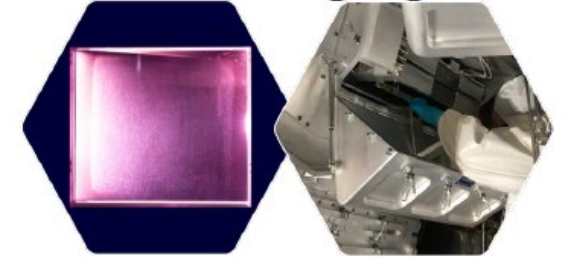
Systems across NIF are aging

- Schedule disruption due to reactive maintenance
- Older capabilities impacted by high yield
- Laser upgrade to be completed during sustainment project

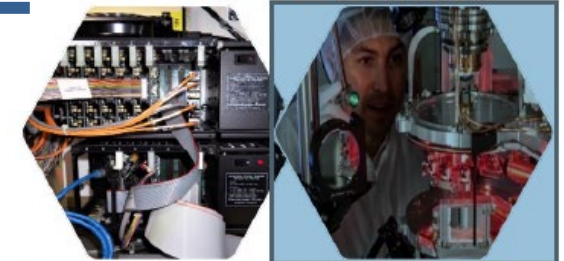
Scheduling points of contact:

Derrick Lasse ([lassle3](#)), Megan Francisco ([francisco6](#))

## Laser Aging



## Obsolescence



## Deferred Maintenance



This is an on-going process that evolves as the facility analyzes data and receives feedback from affected parties