

NCSP T&EP LANL Course Syllabus

Description

This training course provides an overview of how to perform nuclear criticality safety (NCS) evaluations (NCSEs) in accordance with the guidance in DOE-STD-3007, applicable ANSI/ANS series 8 standards, and DOE Orders and Standards.

The course provides a review of NCS fundamentals, lessons-learned from selected process criticality accidents, an overview of ANSI/ANS-8 standards, and interpretive guidance from DOE with respect to relevant DOE Orders and Standards. Each student is assigned to an evaluation team to evaluate a fissile material process at the LANL plutonium facility, PF-4.

Schedule

The course is designed to last the entire week. It is recommended that students show up at the LANL badge office at 7:30 am on Monday. As soon as you are done at the badge office, proceed to Canyon School (see maps below) as soon as possible. The start time on Tuesday, Thursday and Friday will be 8:00 am. The tour of the LANL Plutonium Facility is scheduled for Wednesday morning. Please meet at Canyon School at 7:00 am to carpool to the TA-55 access center to prepare for the tour. The tour will take much of Wednesday morning to complete.

Objectives

- Review basic NCS fundamentals, process criticality lessons-learned, and history that is important in NCS evaluation development,
- Review and understand the ANSI/ANS-8 series standards and how they are used in the development of NCS evaluations,
- Review and understand the DOE Orders and Standards that are used in the development of NCS evaluations,
- Learn about the evaluation process with respect to roles and responsibilities, conducting effective walkdowns, defining normal and credible abnormal conditions, etc., and
- Work with a small team in the development of a criticality safety evaluation for a fissile material operation at the LANL plutonium facility using the principles and guidance taught in the class modules.

Prerequisites

The course attendees will benefit from have completed reading and understanding the Nuclear Criticality Safety Engineer Training Modules (1-15) available at <http://ncsc.llnl.gov/trainingMain.html>. The attendees shall also have a good background in reactors physics, knowledge of NCS handbooks (LA-10860-MS, LA-12808, etc.), and some practical knowledge of NCS hand calculation methods will be useful, although some hand calculation classes will be discussed during the course.

Target Audience

The course is primarily targeted for professionals just entering the criticality safety discipline. It is also designed for current criticality safety engineers seeking to maintain technical capabilities.

Completion Requirements

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Attendees must complete the week long course and pass an exam at the end of the course with a grade of 80% or better. Certificates of successfully completing the course will be mailed to students later after the course. Participation is expected from all course attendees.

Instructors

Staff from the following organizations: LANL Nuclear Criticality Safety Group, NNSA/Los Alamos Site Office, Oak Ridge National Laboratory, and Sandia National Laboratory.

Course Logistics

A comprehensive guide for Los Alamos transportation, lodging, dining, entertainment, recreation, and weather is available. (<http://www.lanl.gov/orgs/hr/worklife/visitors.shtml>)

Hotels

The following hotels are available for participants in the LANL NCSP T&EP course. The recommended hotels are noted with an asterisk (*).

Name	Phone #	Address	Rates	Miles from Lab
*Holiday Inn Express Entrada Park	(505) 661-2646	Los Alamos, NM	\$ 86.00 +	Approx. 10 minutes away
*Best Western Hilltop House Hotel	(505) 662-2441	Los Alamos, NM	\$ 86.00 +	Approx. 7 minutes away
*Los Alamos Comfort Inn & Suites	(505) 661-1110	Los Alamos, NM	\$ 86.00 +	Approx. 7 minutes away
Hampton Inn	(505) 672-3838	White Rock, NM	\$ 93.00 +	Approx. 8 mi. 20 minutes away
Hilton SF Golf Resort, Spa & Casino @ Buffalo Thunder	(505) 455-5555	Pojoaque, NM	\$100.00 +	Approx. 20 mi. 30-40 minutes away

Transportation

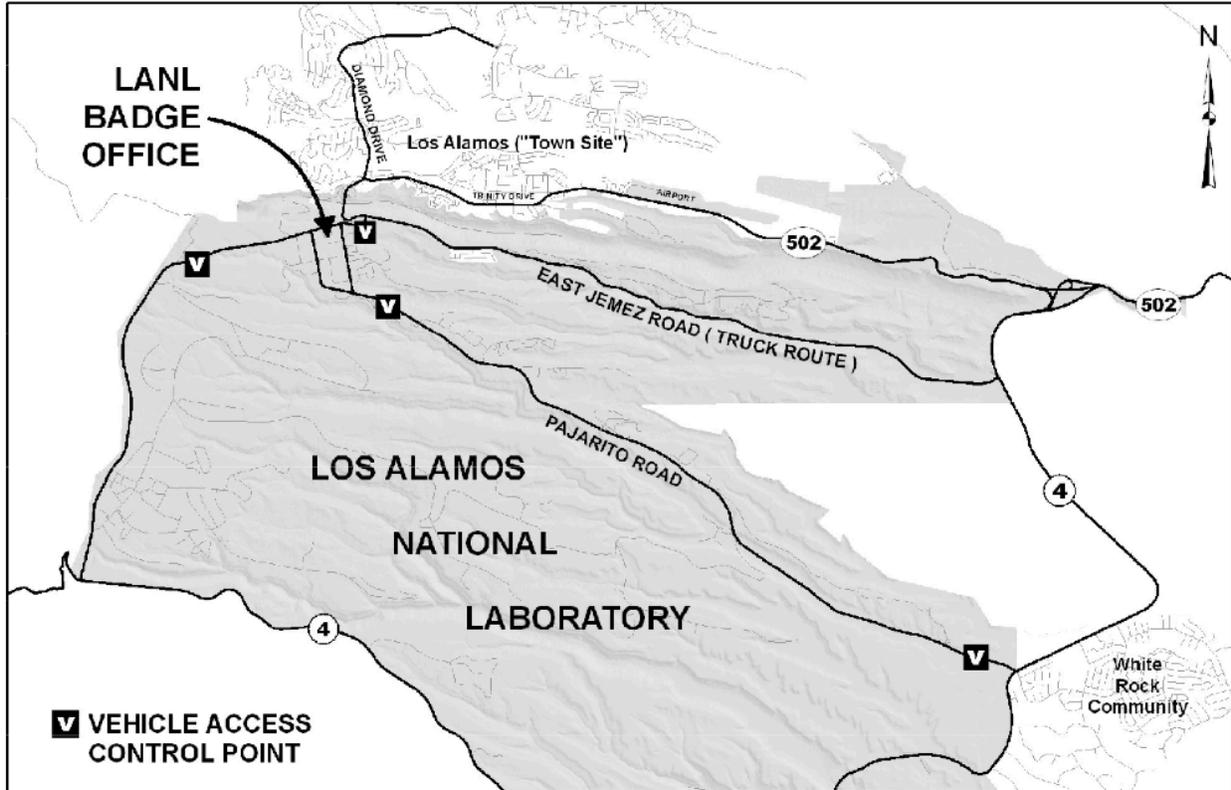
There is a bus service (Atomic City Transit – <http://www.losalamosnm.us/transit/Pages/default.aspx>) in Los Alamos County provided at no cost.

Because of road construction throughout Los Alamos County, it is recommended that course attendees allow sufficient time to arrive at LANL. **It is recommended that show up at the badge office at or before 07:30 am. If you are running late, please contact Doug Bowen @ 505-500-2857 or the Nuclear Criticality Safety Group Office at 505-667-4789.**

Maps to the LANL Badge Office are provided below. Please bring your DOE standard badge with you to present to the badge office staff for processing. There is a vehicle access control point shown on the map. In most cases, the attendees can drive through this control point but it is possible that you could be stopped for a vehicle inspection. Simply cooperate with laboratory security during this process, if necessary.

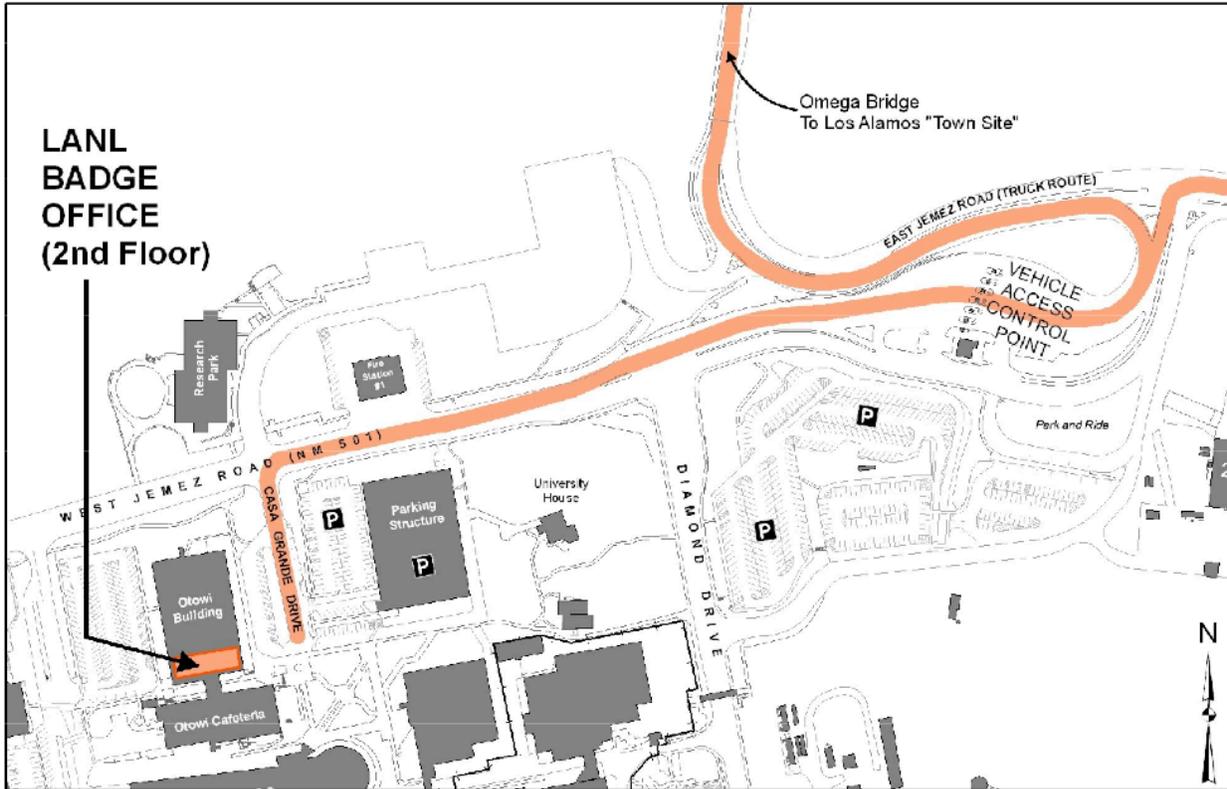
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The second map shows the location of the LANL badge office (2nd floor of the Otowi building). It is highly recommended that attendees park in the parking structure shown on the map across the parking lot from the Otowi building. Early arrival ensures that you can obtain a parking spacing in the parking structure. The 3rd floor of the Otowi building has a cafeteria that is open for breakfast. A course representative will meet the course attendees in the badge office and will direct the attendees to the classroom at the J. Robert Oppenheimer Study Center (adjacent to the parking structure and across the courtyard from the Otowi building – as shown in the third map).



Map 1 – Map of the Los Alamos Townsite and LANL

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Map 2 – Access to LANL Coming from the Townsite

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Map 3 – Location of Canyon School at the Corner of Trinity Dr. and Canyon Rd. (Location of Classroom Training)