

ANL/EA/CP-98746

The submitted manuscript has been created by the University of Chicago as Operator of Argonne National Laboratory ("Argonne") under Contract No. W-31-109-ENG-38 with the U.S. Department of Energy. The U.S. Government retains for itself, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in said article to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.

RECEIVED  
OCT 19 1999  
OSTI

HISTORIC PRESERVATION REQUIREMENTS AND THE EVALUATION OF COLD WAR ERA NUCLEAR  
FACILITIES AT ARGONNE NATIONAL LABORATORY-EAST\*

Konnie L. Wescott

Argonne National Laboratory  
Argonne, Illinois

Prepared for

National Association of Environmental Professionals  
24<sup>th</sup> Annual Conference  
June 20-24, 1999  
Kansas City, Missouri

---

\* Work supported by the U.S. Department of Energy, Assistant Secretary for Environmental Management, under contract W-31-109-Eng-38

## **DISCLAIMER**

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.**

## **DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

# HISTORIC PRESERVATION REQUIREMENTS AND THE EVALUATION OF COLD WAR ERA NUCLEAR FACILITIES AT ARGONNE NATIONAL LABORATORY-EAST

Konnie L. Wescott<sup>1</sup>  
Environmental Assessment Division  
Argonne National Laboratory  
Argonne, IL

## ABSTRACT

Project design for the decontamination and decommissioning (D&D) of federal facilities must address the requirements of the National Environmental Policy Act, which includes compliance with the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires that Federal agencies consider any effect their activities may have on historic properties. While a cultural property is not usually considered "historic" until it has reached an age of 50 years or older, special consideration is given to younger properties if they are of exceptional importance in demonstrating unique development in American history, architecture, archaeology, engineering, or culture. As part of the U.S. Department of Energy's (DOE's) D&D program at Argonne National Laboratory-East (ANL-E), site properties are evaluated within the context of the Cold War Era and within themes associated with nuclear technology. Under this program, ANL-E staff have conducted archival research on three nuclear reactor facilities, one accelerator, and one laboratory building. DOE and ANL-E have been working closely with the Illinois Historic Preservation Agency (IHPA) to determine the eligibility of these properties for listing on the *National Register of Historic Places*. In 1998, in consultation with the IHPA, the DOE determined that the reactor facilities were eligible. Memoranda of Agreement were signed between the DOE and the IHPA stipulating mitigation requirements for the recordation of two of these properties. The laboratory building was recently determined eligible and will likely undergo similar documentation procedures. The accelerator was determined not eligible. Similar studies and determinations will be required for all future D&D projects.

## Introduction

The National Historic Preservation Act (NHPA) of 1966, as amended, protects cultural resources, including archaeological sites, historic buildings or structures, and traditional cultural properties. Cultural resources that meet the eligibility criteria for the *National Register of Historic Places* (National Register - Title 36 of the *Code of Federal Regulations*, Part 60 [36 CFR 60]) are considered "significant" resources and must be taken into consideration during the planning of federal projects (see Table 1 for evaluation criteria for determining significance). Section 106 of the NHPA requires that the Advisory Council on Historic Preservation be given an opportunity to comment on the effects a federal undertaking may have on resources included on or eligible for inclusion on the National Register. Section 110 of the NHPA requires that all federal agencies identify, evaluate, and nominate significant resources under their jurisdictions.

---

<sup>1</sup> Konnie L. Wescott, Argonne National Laboratory, 9700 South Cass Avenue, EAD Building 900, Argonne, Illinois, 60439; phone: (630) 252-6789; fax: (630) 252-6090; e-mail: wescott@anl.gov.

Decommissioning activities at Argonne National Laboratory-East (ANL-E), a U.S. Department of Energy (DOE) research facility in DuPage County, Illinois, involve the decontamination, dismantling, and disposal of radioactively contaminated facilities no longer in use at ANL-E. The goal of decontamination and decommissioning (D&D) activities is to release for unrestricted reuse, to the maximum extent possible, specific rooms, buildings, and materials associated with previous facility operations.

Some of these facilities possess historic significance because of the role of ANL-E in nuclear reactor development during the Cold War and could potentially be eligible for listing on the National Register. Under the NHPA, the DOE is responsible for considering impacts of projects, including decommissioning, on eligible properties at ANL-E and mitigating any adverse effects.

ANL-E has now celebrated its 50th anniversary, and many of its facilities are beginning to fall within the 50-year framework for triggering National Register evaluations of significance (see Table 1). However, since the end of the Cold War and its obvious historic significance, federal agencies must also look at Cold War-related properties, regardless of the 50-year framework, to evaluate whether they meet the criteria consideration of exceptional importance. What this means for federal facilities like ANL-E is that inventories and evaluations of buildings constructed before and during the Cold War are now essential for meeting the requirements of Sections 106 and 110 of the NHPA.

#### **Evaluation of Historic Buildings at ANL-E**

Prior to ANL-E's 50th anniversary, compliance with the NHPA at ANL-E was focused predominantly on archaeological resources. The shift toward educating the DOE, ANL-E personnel, and contractors about the application of the NHPA to buildings and structures (especially those that are less than 50 years old) has been slow. The reality that the requirements of the NHPA can be applicable to properties less than 50 years old was introduced to ANL-E with the decommissioning of the Chicago Pile-5 (CP-5) Reactor, Experimental Boiling Water Reactor (EBWR), and Argonne Thermal Source Reactor (ATSR). Unfortunately, decommissioning activities for two of the reactor facilities were already underway when it was discovered that each of the facilities required an evaluation for historical significance in order to meet NHPA compliance requirements. In addition, the subsequent historical evaluation report conducted for the three reactor facilities by a subcontractor in 1996 was not originally accepted by the Illinois Historic Preservation Agency (IHPA). It was not until 1998 that the CP-5 and EBWR were determined to be eligible for the National Register and that ATSR was identified as a contributing component to an eligible complex of buildings. Memoranda of Agreement (MOA) were signed stipulating the mitigation of adverse effects to the CP-5 and ATSR caused by D&D activities. The mitigation was to historically document according to Illinois Historic American Building Survey (IL HABS) and Historic American Engineering Record guidelines what was left of the CP-5 and ATSR. EBWR was not similarly documented because the D&D project was complete by the time the eligibility determination was made. The outer building remains and is still considered eligible. It has been adaptively reused as a storage facility.

Until a sitewide inventory of buildings has been completed at ANL-E, individual evaluations of facilities scheduled for decommissioning are being submitted to the IHPA by the DOE prior to initiation of the project. These evaluations, which must be completed by a qualified historian or archaeologist, consist of a description of the facility and its historic context or background, and a statement of its significance (or lack thereof) based on whether the facility meets any of the eligibility criteria (Table 1). The DOE

uses the results of the evaluation to make an eligibility determination (i.e., eligible or not eligible) and submits it to the IHPA with the evaluation report.

If the IHPA concurs with a "not eligible" determination by the DOE, no further work is required and decommissioning activities may proceed.

If the IHPA concurs with an "eligible" determination, the DOE must enter into an MOA with the IHPA to stipulate what actions are required by the DOE to mitigate adverse effects.

If the IHPA does not concur with the DOE's determination, the DOE has three options: (1) to provide the IHPA with additional supporting documentation that substantiates the position of the DOE, (2) to appeal its case to the Advisory Council on Historic Preservation, or (3) to reverse its determination and accept the IHPA's recommendation.

ANL-E has recently completed evaluations for future decommissioning activities for the Physics and Metallurgy Hot Laboratory (Building 301), the Argonne 60-inch Cyclotron, and a complex of buildings associated with the operation and research of zero-power reactors (Buildings 314, 315, and 316). Building 301 and the Building 314/315/316 complex have been determined eligible, although Building 314 was found to be a noncontributing element to the historically significant complex. The 60-inch Cyclotron is not considered eligible. The DOE is currently in the process of negotiating an MOA with the IHPA for mitigating effects of proposed D&D activities on Building 301. D&D activities for Buildings 315 and 316 are not scheduled for several years, but also will require an MOA and completion of mitigation efforts prior to their initiation. D&D activities for the 60-inch Cyclotron will be allowed to proceed without any further consultation regarding historic preservation.

The MOA between the DOE and the IHPA for the CP-5 and ATSR stipulated completion of recordation for the IL HABS at documentation Level 2. The requirements of Level 2 documentation include original drawings of the building photographically reproduced on archivally stable mylar, large-format negatives and 5 x 7 prints of exterior and interior views of the building, copies of historic views of the building (as available), and a written contextual history and architectural description (IHPA 1995). The final documentation is to be archived at the Illinois State Historical Library Archives and must meet specific archival standards for documents, drawings, and photographs. The entire document must be printed on acid-free archival bond paper. Drawings must be printed on specially formatted large mylar sheets. The photographs must be 5 x 7 black and white prints on polyfiber paper and placed on archival quality photo mount cards. Negatives must be labeled and placed in acid-free paper sleeves. Typically, as stated above, large-format photographs that involve special camera equipment and processing techniques are required for Level 2 documentation. However, the IHPA accepted the use of 35-mm photography for the CP-5 and ATSR documentation because of space constraints in the room housing the ATSR that were not conducive to large format photography.

#### **Future NHPA-Related Activities at ANL-E**

To streamline compliance with the NHPA and prevent project delays, the DOE is in the process of creating a Programmatic Agreement with the IHPA for ANL-E. Submittal of a cultural resources management plan for ANL-E is part of that agreement. The plan will outline procedures to be followed by ANL-E personnel and the DOE to ensure the protection of ANL-E's historic properties. Also as part of the agreement, a sitewide inventory of ANL-E facilities will be conducted in the near term. The inventory will provide an overall historic context for ANL-E from which all of the facilities on site can be evaluated for historical significance. The inventory will also provide recommendations

as to which buildings have the potential of being eligible for listing on the *National Register of Historic Places*. Upon completion of this project, all managers of future decommissioning activities at ANL-E will know well in advance whether the NHPA will affect their particular project.

**Reference**

Illinois Historic Preservation Agency (IHPA), 1995, "The Illinois Historic Preservation Agency's Standards and Guidelines for Architectural and Engineering Documentation: IL HABS/HAER Standards," Illinois Historic American Buildings Survey/Historic American Engineering Record Preservation Services Division, Illinois Historic Preservation Agency, Springfield, Illinois, July.

---

**Table 1: National Register Eligibility Criteria (36 CFR 60)**

"The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and..." meet one or more of the following four criteria for evaluation - A, B, C, or D.

Criterion A: Associative Value -- Event. "Properties can be eligible for the National Register if they are associated with events that have made a significant contribution to the broad patterns of our history."

Criterion B: Associative Value -- Person. "Properties can be eligible for the National Register if they are associated with the lives of persons significant in our past."

Criterion C: Design or Construction Value. "Properties can be eligible for the National Register if they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction."

Criterion D: Information Value. "Properties can be eligible for the National Register if they have yielded, or may be likely to yield, information important in prehistory or history."

*Also applicable to ANL-E is a special criteria consideration.*

Criteria Consideration G: Properties That Have Achieved Significance within the Last Fifty Years. "A property achieving significance within the last fifty years is eligible if it is of exceptional importance."

---