ORNL/M-6145,R1

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OAK RIDGE NATIONAL LABORATORY

LOCKHEED MARTIN

# EXECUTIVE ORDER 12941 IMPLEMENTATION AT THE OAK RIDGE NATIONAL LABORATORY

K. E. Shaffer
R. J. Kroon
R. J. Hunt



August 1998

Prepared by the
Center for Natural Phenomena Engineering
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831-8218

Prepared for the
Oak Ridge National Laboratory
managed by
LOCKHEED MARTIN ENERGY RESEARCH, INC.
Oak Ridge, Tennessee 37831-6285
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-96OR22464

MANAGED AND OPERATED BY
LOCKHEED MARTIN ENERGY RESEARCH CORPORATION
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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## DISCLAIMER

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# EXECUTIVE SUMMARY

Congress enacted the *Earthquake Hazards Reduction Act of 1977* (Public Law 95-124, as amended) to reduce risks to life and property from future earthquakes in the United States. To implement the provisions of the Act, the Interagency Committee on Seismic Safety in Construction (ICSSC) was chartered. Approximately thirty Federal agencies, including the Department of Energy (DOE), participate in the ICSSC. The ICSSC is chaired by the National Institute of Standards (NIST) which also provides the technical secretariat.

Executive Order (EO) 12699, *Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction*, and EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*, were prepared and issued by the ICSSC to reduce the vulnerability to buildings owned or leased by agencies or departments for Federal use. EO 12699 and EO 12941 were signed January 5, 1990 and December 1, 1994, respectively (ICSSC 1990 and ICSSC 1994a). As stipulated in the Orders, the Federal Emergency Management Agency (FEMA) is responsible for the implementation of EO 12699 and EO 12941. NIST, via the ICSSC, provides technical assistance to Federal agencies or departments for the implementation of the requirements of EO 12699 and EO 12941. The ICSSC also prepared ICSSC RP 5/NISTR 5374, *ICSSC Guidance on Implementing Executive Order 12941 on Seismic Safety of Existing Federally Owned or Leased Buildings* and ICSSC TR-17/NISTR 5770, *How-To Suggestions for Implementing Executive Order 12941 on Seismic Safety of Existing Federal Buildings, A Handbook* to facilitate the implementation of EO 12941 (ICSSC 1995a and ICSSC 1995b).

The goals of EO 12941 are to develop inventories of Federally owned buildings, identify vulnerable buildings within the inventories, and prepare cost estimates for rehabilitating these buildings. The inventory and cost estimate information collected will be used to develop reliable information for developing future national public policy for mitigating seismic risk of vulnerable buildings within the Federal inventory.

Inventory and cost estimate data collected across the DOE complex will be compiled, consolidated, and forwarded to FEMA in December 1998. By December 2000, FEMA will have submitted to Congress a complete Federal inventory and cost estimate. For purposes of EO 12941, a building is defined as any structure, fully or partially enclosed, located within the United States, used or intended for sheltering persons or property. Exceptions to the definition of a building are described in ICSSC RP 4/NISTR 5382, *Standards of Seismic Safety for Existing Federally Owned or Leased Buildings and Commentary* (ICSSC 1994b).

To expedite the implementation of EO 12941 across the DOE complex, the Seismic Safety Working Group (SSWG) was established and the *Management Plan for the Implementation of Executive Order 12941* was prepared and issued (DOE 1996). The DOE management plan incorporates and considers guidance in RP 4, RP 5, and TR-17 and provides additional DOE-specific guidance for implementing EO 12941 at it's sites.

This report documents the implementation of EO 12941 at the Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee. ORNL is managed and operated by Lockheed Martin Energy

Research, Inc. (LMER) for the DOE-Oak Ridge Operations Office (DOE-ORO). The ORNL building inventory includes buildings that are physically located at ORNL, East Tennessee Technology Park (ETTP), and the Oak Ridge Y-12 Plant. This report addresses buildings physically located at the ORNL plant site. ORNL buildings located at ETTP and Y-12 plant sites will be included in the EO 12941 implementation reports for those sites. The scope of this effort included revising the building inventory for ORNL that was prepared prior to the development of the DOE management plan, evaluating owned buildings not exempt from the requirements of EO 12941, estimating the costs associated with the rehabilitation of vulnerable non-exempt buildings, and preparing this report in the TR-17 prescribed format (CNPE 1996). These activities were performed in accordance with the DOE management plan and as applicable, *Phase I - Screening Guidelines To Determine The Structures Exempt From Executive Order 12941* (CNPE 1995).

At ORNL, there are six contractor (LMER) leased buildings and 528 DOE owned buildings. By direction from DOE, contractor leased buildings are discussed in this report but no evaluations were performed. One of the contractor leased buildings were determined to be exempt from the requirements of EO 12941. The balance of the leased buildings, five, are considered non-exempt. Appendix A fulfills the inventory requirements for the leased buildings. Of the 528 owned buildings, 367 were determined, through a screening process, to be exempt from the requirements of EO 12941. One hundred sixty-one owned buildings were found to be non-exempt. Appendices C, D, and E to the report fulfill the inventory requirements for owned buildings at the ORNL site.

The 161 non-exempt buildings, were evaluated to determine if there were any Exceptionally High Risk (EHR) or Definitely Needing Rehabilitation (DNR) buildings at ORNL. To identify EHR buildings, seismicity, structural system, building function, number of occupants, and criticality to mission are some of the factors that are considered. Buildings identified as EHR are representative of a higher priority action to be considered in the public policy development activities for mitigating seismic risk after the year 2000. In areas of Moderate seismicity such as Oak Ridge, it is expected that 0.5 to 1.0 % of the total building inventory will fall in the EHR category. DNR is defined as those buildings that are so obviously in need of rehabilitation that they do not need further evaluation to determine that rehabilitation efforts are needed. Buildings identified as DNR do not require further evaluation while EHR buildings are required to be fully evaluated. There is one DNR building at ORNL, building 1506, and two EHR buildings, 4500N and 4500S.

A representative sample of each building type of the non-exempt buildings were evaluated. At ORNL, there are 13 different building types including the building types representative of the DNR (1506) and EHR (4500N and 4500S) buildings. One evaluation was performed during this effort. Building 1506 was evaluated to confirm the DNR classification. To minimize the cost of the evaluations, previous seismic analyses for the same building type were used whenever possible. Previous evaluations used to support the this effort include the Turnpike Building in Oak Ridge, TN, buildings K-601, K-731, K-1001, K-1004-A, K-1037, K-1401, K-1423, K-1435-C, K-1650, and K-1654-A at ETTP, building 3025E at ORNL, and buildings C-300 and C-720-K at the Paducah Gaseous Diffusion Plant, Paducah, KY. Ongoing evaluations of 3019A, 3019B, and 7920 at ORNL were also considered to fulfill the requirements of the evaluation phase.

Of the buildings evaluated or reviewed, the following twenty-nine buildings were found to be

seismically vulnerable.

| | | | |
|---|---|---|---|
| 1000 | 3038 | 5000 | 7569 |
| 1504 | 3105 | 5500 | 7830 |
| 1506 (DNR) | 3500 | 5506 | 7834 |
| 2010 | 4500N (EHR) | 6000B | 7852 |
| 2026 | 4500S (EHR) | 6003 | 7931 |
| 2537 | 4501 | 6010 | |
| 3009 | 4508 | 6025 | |
| 3037 | 4515 | 7567 | |

The buildings identified in this report as being vulnerable to seismic events do not pose any greater risk to building occupants or to the general public than any other building population of similar size in the eastern United States. Seismic rehabilitation of buildings at this time is not required unless the function of the building has changed which increases the level of use, importance, or occupancy, the useful life of the building is extended more than 50 % of it's replacement value through modifications or alterations, or the building has been damaged by events such as earthquakes, fire, wind, or other cause. Programs to fully mitigate the identified vulnerable buildings will be developed by FEMA and Congress after December 2000.

Rehabilitation cost estimates were prepared using FEMA-156, *Second Edition, Typical Costs for Seismic Rehabilitation of Existing Buildings, Volume 1 - Summary*, and FEMA-157, *Second Edition, Typical Costs for Seismic Rehabilitation of Buildings, Volume II - Supporting Documentation*, and DOE specific guidance issued after this report was issued in November 1997 (FEMA 1994 and 1995, DOE 1998a and DOE 1998b). Chapter 5, *Cost Estimating Process*, describes the process to derive rehabilitation cost estimates. The cost estimates for evaluated and non-evaluated buildings are summarized in Appendix E and Tables 6-1 and 6-2, respectively. The total estimated cost for rehabilitating ORNL is $34,777,300 in 1998 dollars. The estimated rehabilitation cost of the DNR building, 1506, has been estimated in 1998 dollars as approximately $302,800. The estimated rehabilitation costs in 1998 dollars for the EHR buildings, 4500N and 4500S are $11,890,300 and $9,563,100, respectively.

This revision incorporates revised cost estimates in accordance with current DOE cost estimating.

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# ACRONYMS

| | |
|---|---|
| BO | Building Occupancy |
| BV | Building Vulnerability |
| CAS | Condition Assessment Survey |
| DOE | Department of Energy |
| DOE-ORO | Department of Energy-Oak Ridge Operations |
| DNR | Definitely Needing Rehabilitation |
| EO | Executive Order |
| EHR | Exceptionally High Risk |
| ETTP | East Tennessee Technology Park |
| FC | Failure Consequence |
| FEMA | Federal Emergency Management Agency |
| FIMS | Facilities Information Management System (U. S. Department of Energy) |
| GSA | General Services Administration |
| HC | Hazard Category |
| HH | High Hazard |
| ICSSC | Interagency Committee on Safety in Seismic Construction |
| LMER | Lockheed Martin Energy Research, Inc. |
| LH | Low Hazard |
| MH | Moderate Hazard |
| NEHRP | National Earthquake Hazards Reduction Program |
| NPH | National Phenomena Hazards |
| ORNL | Oak Ridge National Laboratory |
| PC | Performance Category |
| PGDP | Paducah Gaseous Diffusion Plant |
| RK | Risk Ranking |
| RP | Recommended Practice |
| SAR | Safety Analysis Report |
| SSWG | Seismic Safety Working Group |

# 1. SCREENING PROCESS

As stated in Executive Order (EO) 12941, any agency that owns or leases buildings for Federal use is required to develop by December 1, 1998 seismic inventories of their owned and leased buildings and cost estimates for mitigating unacceptable seismic risks to those inventories (ICSSC 1994a). To ensure that all agencies consistently evaluate and mitigate seismic hazards for their building inventories, the Interagency Committee on Safety in Seismic Construction (ICSSC) prepared and issued ICSSC RP 4/NISTR 5382, *Standards of Seismic Safety for Existing Federally Owned or Leased Buildings and Commentary* (ICSSC 1994b). RP 4 was adopted by EO 12941 as the standard for assessing seismic safety. Substantial life-safety is the minimum acceptable performance objective as defined in RP 4. The ICSSC also prepared ICSSC RP 5/NISTR 5374, *ICSSC Guidance on Implementing Executive Order 12941 on Seismic Safety of Existing Federally Owned or Leased Buildings* and ICSSC TR-17/NISTR 5770, *How-To Suggestions for Implementing Executive Order 12941 on Seismic Safety of Existing Federal Buildings, A Handbook*, to facilitate the implementation of EO 12941 (ICSSC 1995a and ICSSC 1995b).

For purposes of EO 12941, a building is defined as any structure, fully or partially enclosed, located within the United States, used or intended for sheltering persons or property, except for the exclusions described in RP 4.

Each agency owning or leasing buildings are required by EO 12941 to submit to the Federal Emergency Management Agency (FEMA) their inventories, cost estimates, and supporting documentation by December 1, 1998. RP 5 and TR-17 provide the reporting and inventory formats to be used. The inventories (databases) are also to be submitted electronically to FEMA by this date. Agencies that own and lease buildings will develop two separate inventories, one for owned buildings and one for leased buildings.

The Department of Energy (DOE) is a Federal agency that both leases and owns buildings. To expedite the implementation of EO 12941 across the Department of Energy (DOE) complex, the Seismic Safety Working Group (SSWG) was established and the *Management Plan for the Implementation of Executive Order 12941* was prepared and issued (DOE 1996c). The DOE management plan incorporates and considers guidance in RP 4, RP 5, and TR-17 and provides additional DOE-specific guidance for implementing EO 12941 at it's sites.

## 1.1 SCREENING OF LEASED AND OWNED BUILDINGS

The flowchart illustrated in Fig. 1-1 depicts the DOE screening process for leased and owned buildings. From the figure, the starting point for the screening activities is an initial building inventory for the site. To develop the initial building inventory, the agency may elect to use any property inventory strategy in place for a complete listing of their buildings. For DOE locations, the Facilities Information Management System (FIMS) and the Condition Assessment Survey (CAS) program are good starting points for developing a comprehensive inventory for a particular site.

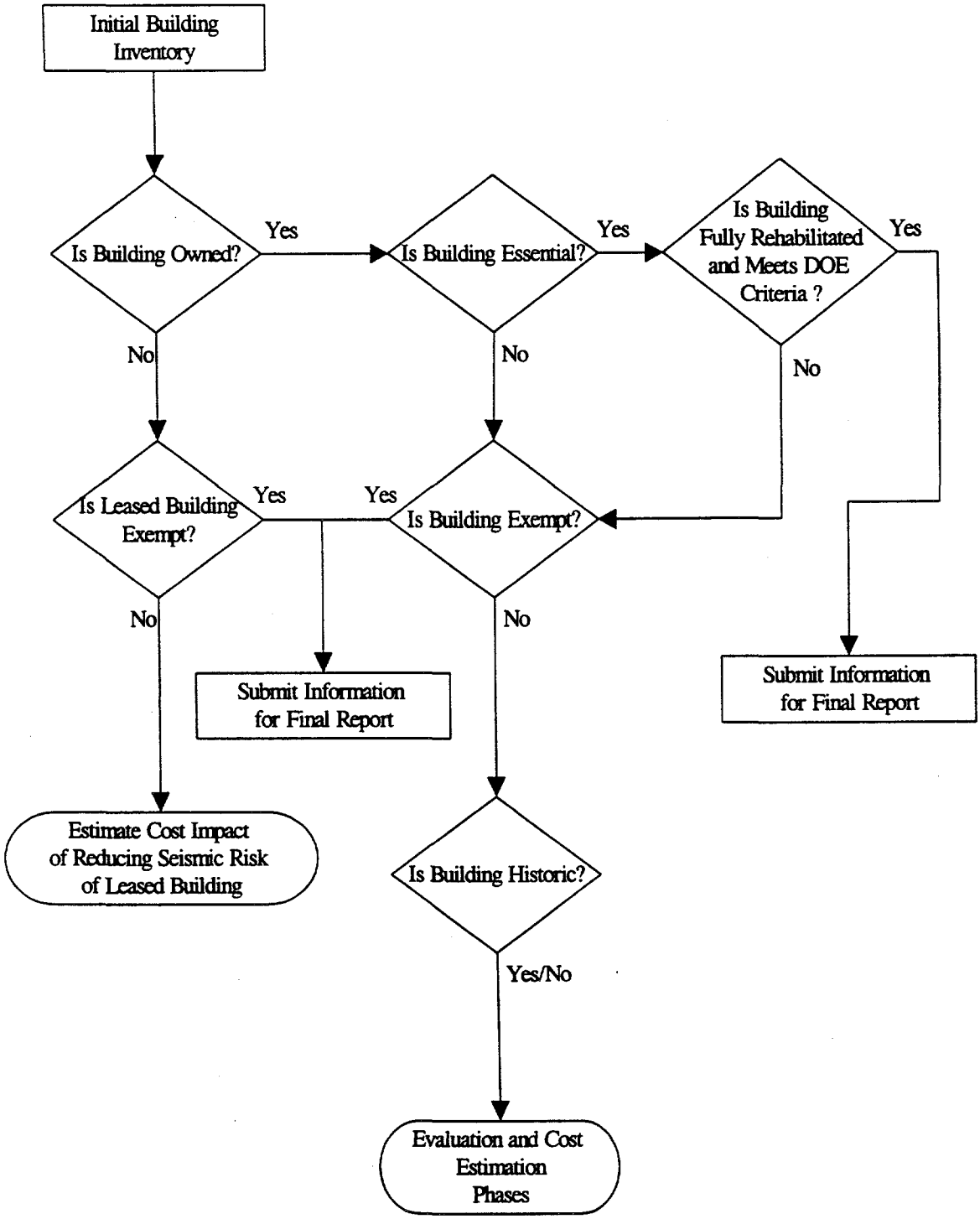


**Fig. 1-1. Screening Flowchart for DOE Leased and Owned Buildings**

Once leased versus owned determinations have been made, additional screening activities are to be applied to help identify high risk, high priority owned buildings. The decision boxes shown in Fig. 1-1 represent the screens to be applied to the leased and owned inventories and the actions to be undertaken pending the outcome of the screen. The terminator boxes at the bottom of the Fig. 1-1 indicate the next phases of the implementation of EO 12941.

The leased and owned buildings at the Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee were screened applying the logic shown in Fig. 1-1. ORNL is managed and operated by Lockheed Martin Energy Research, Inc. (LMER) for the DOE-Oak Ridge Operations Office (DOE-ORO). An initial building inventory for ORNL was previously prepared which utilized FIMS data for the site and a site-specific building directory (CNPE 1996). Six leased and 527 owned buildings were identified and are listed in Appendix A and B, respectively.

### 1.1.1 Screening Leased Buildings

Per RP 4, leased buildings are exempt from the requirements of EO 12941 if the leased space is less than 10,000 $ft^2$ (930 $m^2$) and DOE leases less that 50 % of the total building square footage. Conversely, if the leased space is greater than 10,000 $ft^2$ and DOE leases more than 50 % of the total building square footage, then the building is considered non-exempt. If the non-exempt building does not meet DOE seismic safety standards then the lease on the building is not to be renewed. Existing leases may be held without mitigative action until the lease expires.

To fulfill the inventory requirements of EO 12941 for leased buildings, the ICSSC recommends submitting existing DOE lease inventory data to FEMA if the space is not leased from the General Services Administration (GSA) or another Federal agency. DOE is also required to estimate the cost impact of reducing seismic risk in leased buildings and report the findings in supporting documentation.

Currently, there are six buildings leased by LMER for DOE which support the ORNL mission. One contractor leased building, 1060 COMM, was found to be exempt while the balance of the contractor leased buildings, five, were determined to be non-exempt. All leased buildings at ORNL are leased from non-Federal agencies.

#### 1.1.1.1 Exempt Leased Buildings

Building 1060 COMM was found to be exempt because LMER leases less than 10,000 $ft^2$ and less than 50 % of the total square footage of the building. No further evaluation of this building is required.

#### 1.1.1.2 Non-Exempt Leased Buildings

There are five non-exempt contractor leased buildings included in the ORNL inventory. Located within the Oak Ridge, TN area are FEDC, 78 MITCHELL, and 101 MID. These buildings comprise more than 50 % of the total square footage of the building and therefore were determined to be non-exempt. There are two buildings, GERMANTOWN, MD and CAPITAL

GALLERY that are classified as non-exempt due to the lack of information regarding these buildings. An assessment to determine if these five contractor leased buildings meet DOE seismic safety standards has not been performed. Guidance has been provided to the DOE field offices that if the leased buildings do not meet DOE standards then the leases are not to be renewed.

Appendix A to this report satisfies the inventory requirements for the leased buildings at ORNL.

### 1.1.2 Screening Owned Buildings

It is estimated that the Federal government owns close to a half-million buildings. It would be prohibitively costly to collect detailed seismic vulnerability information and rehabilitation cost estimates on the entire Federal government building population. RP 4 defines exemption criteria (screens) to be applied to the owned building inventory to identify those buildings that present an extremely low threat to life-safety (exempt) in the event of an earthquake. The remaining buildings not meeting the RP 4 exemption criteria (non-exempt) are further evaluated to determine seismic risk and mitigation costs.

#### 1.1.2.1 Essential Building Determinations

One of the first screens to be applied to owned buildings is to identify essential buildings. Essential has been defined as those buildings that require seismic resistance higher than life-safety. Buildings meeting the DOE seismic performance category PC2, PC3, or PC4 criteria as defined in DOE-STD-1021-93, *Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components* and shown in Table 1-1, are considered "essential" for the purposes of the implementation of EO 12941 (DOE 1993). The Building Category Codes noted in Table 1-1 correspond to the performance category criteria designations for the inventory database as described in TR-17 and the DOE management plan.

The Office of Operational Readiness and Facility Safety at ORNL provided the performance category classifications for ORNL buildings.

Table 1-1. DOE Classifications of Building Category

| Building Category Code | DOE Performance Category Criteria Description |
|---|---|
| P1 | General use buildings.<br>(Examples include administrative buildings, cafeterias, storage buildings, repair shops, etc.)<br>Note: Equivalent Performance Category Code is PC-1 (Life safety). |
| P2 | Emergency operations centers, hospitals, fire stations and low-hazard facilities.<br>(Examples of low-hazard facilities include laboratories and production facilities)<br>Note: Equivalent Performance Category Code is PC-2 (Essential). |
| P3 | Buildings that contain significant amounts of hazardous materials that have potential for major on site impact only.<br>(For example, uranium enrichment plants)<br>Note: Equivalent Performance Category Code is PC-3 (Essential). |
| P4 | Buildings that contain significant amounts of hazardous materials that have potential for major impacts off site.<br>(For example, nuclear reactors)<br>Note: Equivalent Performance Category Code is PC-4 (Essential). |

#### 1.1.2.1.1 Non-Essential Buildings

Non-essential buildings, or buildings meeting the DOE PC1 performance category criteria (exempt), are further screened using the RP 4 exemption criteria defined in Table 1-2. The Exemption Codes correspond to the exemption code designations for the inventory database as described in TR-17.

**Table 1-2. Exemption Criteria**

| Exemption Code | Exemption |
|---|---|
| E0 | Building is not exempt. |
| E1 | Building is classified for agricultural use, or intended only for incidental human occupancy, or occupied by persons for a total of less than 2 hours a day. |
| E2 | Building is a detached one- or two-family dwelling located in an area having a governing acceleration coefficient less than 0.15 *g*. |
| E3 | Building is a one-story building of steel light frame or wood construction with an area of less than 280 $m^2$ (3,000 square feet). |
| E4 | The building has been fully rehabilitated to comply with the RP 4 seismic safety standards in all four compliance categories (structural, nonstructural, geologic/site hazards, and adjacency). |
| E5 | The building is a post-benchmark building as defined in Table 1 of RP 4 which also complies with the nonstructural, geologic/site, and adjacency categories. |
| E6 | The building is a pre-benchmark building which has been shown by evaluation to be life-safe in all four compliance categories. |
| E7 | The building was constructed for the Federal government and the detailed design was done after the date of the adoption of Executive Order 12699 (January 5, 1990) and the building was designed and constructed in accordance with ICSSC Guidelines and Procedures for Implementation of the Executive Order on Seismic Safety of New Building Construction. |
| E8 | The remaining useful life of the building has been identified as being less than five years. |
| E9 | Other. This exemption code is also to be used for: special structures, including but not limited to: bridges, transmission towers, industrial towers and equipment, piers and wharves, and hydraulic structures; leased buildings identified as exempt in accordance with RP 4 and Federally permitted or regulated privately owned buildings on Federal land. |

There are 367 exempt buildings at ORNL. Table 1-3 summarizes the number of exempt owned buildings at the ORNL by exemption code.

**Table 1-3. Number of Exempt ORNL Owned Buildings by Exemption Code**

| Exemption Code | Number of Exempt Buildings |
|---|---|
| E1 | 154 |
| E3 | 198 |
| E5 | 1 |
| E7 | 14 |

Not included in Table 1-3 or in the total building population reported in this report (528) are those facilities that should be classified as Other Structures and Facilities but are in the ORNL FIMS database as buildings. Since these facilities do not meet the definition of a building as defined in EO 12941, they have not been included in this report. In the ORNL FIMS database these facilities will be shown as having an E9 exemption.

Appendix C summarizes and fulfills the exempt, owned inventory database requirements for ORNL.

#### 1.1.2.1.2 Essential Buildings

Essential buildings, those buildings meeting the PC2 or greater performance category criteria (non-exempt), must be further evaluated to determine whether the building is fully rehabilitated and meets DOE seismic performance criteria, whether it is historic, or whether the building should be classified as Definitely Needing Rehabilitation (DNR) or Exceptionally High Risk (EHR). In accordance with RP 5, TR-17, and the DOE management plan, the balance of the owned buildings, 161 non-exempt buildings, were evaluated to determine if there were any DNR or EHR buildings at ORNL. There is one DNR building, building 1506, and two EHR buildings, 4500N and 4500S, at ORNL.

Buildings that do not meet DOE seismic performance criteria, are not historic, and are not classified as DNR or EHR are sorted by building type and a representative from each building type is selected for further evaluation. Table 1-4 lists the model building types and the Model Building Codes to be included in the inventory database. The Model Building Codes noted in Table 1-4 correspond to the model building type designations for the inventory database as described in TR-17.

**Table 1-4. Model Building Types**

| Model Building Code | Model Building Type |
|---|---|
| MB01 | Wood Light Frame |
| MB02 | Wood, Commercial and Industrial |
| MB03 | Steel Moment Frame |
| MB04 | Steel Braced Frame |
| MB05 | Steel Light Frame |
| MB06 | Steel Frame with Concrete Shear Walls |
| MB07 | Steel Frame with Infill Shear Walls |
| MB08 | Concrete Moment Frame |
| MB09 | Concrete Shear Walls |
| MB10 | Concrete Frame with Infill Shear Walls |
| MB11 | Precast/Tilt-up Concrete Walls with Lightweight Flexible Diaphragm |
| MB12 | Precast Concrete Frames with Concrete Shear Walls |
| MB13 | Reinforced Masonry Bearing Walls with Wood or Metal Deck Diaphragms |
| MB14 | Reinforced Masonry Bearing Walls with Precast Concrete Diaphragms |
| MB15 | Unreinforced Masonry Bearing Wall Buildings |
| MB16 | Other - describe briefly in Field 23 and in the supporting documentation. |

The balance of the non-exempt buildings less the number of DNR buildings, 160, were sorted by building type to identify a representative sample and to determine the number of seismic evaluations that needed to be performed. Buildings classified as DNR do not require evaluation while EHR buildings are required to be evaluated. At ORNL, there are 12 different building types including the building type representative of the EHR buildings (4500N and 4500S are MB08) and excluding the DNR model building type (MB11). Table 1-5 summarizes the number of non-exempt owned buildings at ORNL by model building type.

**Table 1-5. Number of Non-Exempt ORNL Owned Buildings by Model Building Code, Excluding DNR Model Building Type**

| Model Building Code | Number of Buildings |
|---|---|
| MB02 | 12 |
| MB03 | 43 |
| MB04 | 22 |
| MB05 | 12 |
| MB07 | 4 |
| MB08 | 8 |
| MB09 | 8 |
| MB10 | 8 |
| MB13 | 14 |
| MB14 | 8 |
| MB15 | 19 |
| MB16 | 2 |

Appendices D and E summarize the non-exempt, owned information for ORNL and fulfills the inventory requirements for ORNL.

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# 2. INVENTORY DATA

In addition to the building specific inventory data collected in the Chap. 1, *Screening Process*, additional data related to the site and the buildings are required. This chapter discusses assigning buildings to seismicity categories, buildings that did not fit in the 15 model building types, and foundation types that do not correspond to the foundation types categories as described in TR-17.

Appendix C fulfills the requirements for the inventory database for exempt, owned buildings at ORNL. Appendices D and E satisfy the inventory requirements for the non-exempt, owned buildings and includes data obtained during the evaluation phase for the evaluated buildings.

## 2.1 SEISMICITY ASSIGNMENT

All buildings at ORNL were assigned the seismicity category of Moderate corresponding to the state and county location seismicity values obtained from TR-17 and Table A-1, *Location and Seismicity Data*.

## 2.2 BUILDINGS OUTSIDE OF THE MODEL BUILDING TYPES

At ORNL, two buildings were identified outside of the 15 model building types noted in Table 1-4, *Model Building Types*. Buildings 5500 and 6010 were assigned a building type "Other" or MB16 because these buildings cannot be categorized as having one predominant building type. Building 5500 has both concrete moment frame and steel braced frame building systems (MB08 and MB04, respectively). Approximately 75 % of 5500 is MB08. Building 6010 is approximately 50 % steel braced frame and unreinforced masonry bearing walls (MB04 and MB15, respectively). "Two Building Systems" has been added to the Comment field for each of these buildings in the inventory database.

## 2.3 FOUNDATION TYPE DISCUSSION

As discussed in TR-17 the foundation types for non-exempt buildings that are evaluated are to be included in the inventory. The foundation types listed in TR-17 are shallow foundations (isolated or continuous spread footings or mats), deep (piles or piers) and other. At ORNL, the foundation types are classified as shallow and a FT1 designation assigned per TR-17.

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# 3. SELECTION OF BUILDINGS TO BE EVALUATED

At the conclusion of the screening and inventory phases and the elimination of leased and exempt owned buildings, the buildings to be evaluated were identified and are discussed in the following sections.

## 3.1 DNR BUILDING IDENTIFICATION

To determine whether there are any DNR buildings at ORNL, the guidelines included in RP 5 were considered. Per RP 5, the following building type examples can be designated as DNR.

- unreinforced masonry buildings in areas of high seismicity
- concrete frame buildings without shear walls built before 1960 in areas of high seismicity
- pre-cast frame buildings in moderate and high seismic areas

There is one building at ORNL, 1506, that is a pre-cast frame building and is categorized as a DNR building. It has been given a model building type designation of MB11 in Appendix E.

## 3.2 EHR BUILDING IDENTIFICATION

The approach undertaken at ORNL to identify EHR buildings is as depicted in Fig. 3-1.

### 3.2.1 Building Ranking

DOE has developed a prioritization process to screen out buildings of low seismic vulnerability and to direct initial detailed evaluation and mitigation efforts to the buildings which are at greatest potential seismic risk. Two attributes are assigned for each non-exempt building. The product of these attributes represents the total score for the building. The buildings with the highest final scores represent those buildings with the highest seismic vulnerability.

Existing hazard category (HC) and building occupancy (BO) information for each building is considered. Numerical values for both HC and BO are defined in Tables 3-1 and 3-2, respectively. The higher of the two scores is the FC score.

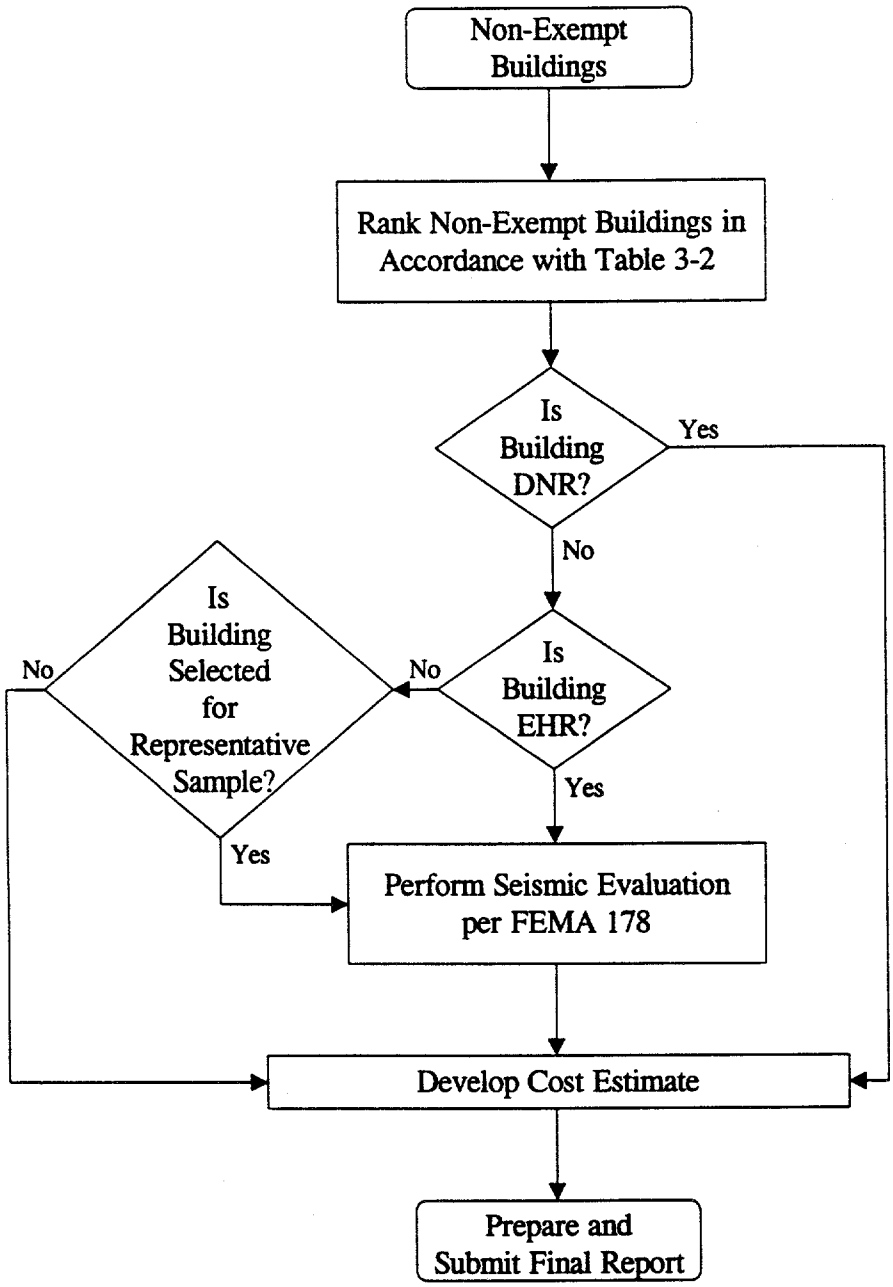


**Fig. 3-1. Evaluation Methodology and Approach**

## Table 3-1. Hazard Category Definitions and Scores

| Hazard Category (HC) | Definition | Score |
|---|---|---|
| HC1 or HH | Potential for significant offsite radiological or chemical hazard. | 10 |
| HC2 or MH | Potential for significant onsite radiological or chemical hazard. | 3 |
| HC3 or LH | Potential for localized or minor radiological or chemical hazard or a facility with essential services which must survive the seismic event. | 1 |
| Other | General usage facility. | 0 |

## Table 3-2. Building Occupancy Scores

| Building Occupancy (BO) | Score |
|---|---|
| 300+ Occupants | 10 |
| 51-300 Occupants | 6 |
| 6-50 Occupants | 3 |
| < 6 Occupants | 0 |

The second attribute is the Building Vulnerability (BV). This attribute is based on the condition of the building in relation to the seismic hazard at the site of the building. The ranking approach is based on assigning the condition of the building as good, fair, poor, or very poor. This qualification is based as much as possible on existing information. Where existing seismic structural analyses have been completed, the ranking is based on the ratio of the seismic capacity to the seismic demand of critical structural members (seismic capacity/demand ratio). Table 3-3 provides a correlation between the seismic capacity/demand ratio and building condition. If there is insufficient existing analysis, the condition of the building should be evaluated using data on building behavior of past earthquakes. To establish the condition of the building, the preliminary evaluation checklists found in FEMA-178, *NEHRP Handbook for the Seismic Evaluation of Existing Buildings* is allowed (FEMA 1992).

## Table 3-3. Building Vulnerability Definitions

| Seismic Capacity/Demand Ratio | Building Condition |
|---|---|
| ≥ 0.9 | Good |
| ≥ 0.7 < 0.9 | Fair |
| ≥ 0.5 < 0.7 | Poor |
| < 0.5 | Very Poor |

The Risk Ranking (RK) is then determined from Table 3-4, below.

## Table 3-4. Risk Ranking Determination (RK = FC × BV)

| | | | Building Vulnerability (BV) | | | |
|---|---|---|---|---|---|---|
| | | | Good=0 | Fair=2 | Poor=7 | Very Poor=10 |
| **Failure Consequences (FC)** | **Hazard Category (HC)** | HC1=10 | 0 | 20 | 70 | 100 |
| | | HC2=3 | 0 | 6 | 21 | 30 |
| | | HC3=1 | 0 | 2 | 7 | 10 |
| | | Other=0 | 0 | 0 | 0 | 0 |
| | **Building Occupancy (BO)** | >300=10 | 0 | 20 | 70 | 100 |
| | | 51-300=6 | 0 | 12 | 42 | 60 |
| | | 6-50=3 | 0 | 6 | 21 | 30 |
| | | <6=0 | 0 | 0 | 0 | 0 |

### 3.2.1.1 EHR Determination for Individual Building

To determine if there were any EHR buildings at ORNL, the non-exempt buildings with the highest building occupancy (BO) were considered, Table 3-5. The hazard classification (HC) for these buildings, as determined during the essential building screening, are General Usage and Moderate Hazard (HC scores equal to 0 and 3, respectively). Building vulnerabilities were then considered. For example, building 1001 is a two-story wood structure and the building condition is considered poor on the basis of an evaluation of a similar building at ETTP (CNPE 1997a).

Building 1000 received a BV score of 42, as read from Table 3-4. This process was repeated for the rest of the buildings in Table 3-5. Table 3-5 summarizes by building, BO and corresponding BV values.

**Table 3-5. EHR Determination Data by Building**

| Building | Number of Occupants | BO | BV |
|---|---|---|---|
| 1000 | 225 | 6 | 42 |
| 1505 | 207 | 6 | 0 |
| 2001 | 104 | 6 | 0 |
| 2500 | 100 | 6 | 0 |
| 3147 | 160 | 6 | 0 |
| 3500 | 187 | 6 | 42 |
| 4500N | 878 | 10 | 70 |
| 4500S | 693 | 10 | 70 |
| 4508 | 157 | 6 | 42 |
| 5500 | 162 | 6 | 42 |

From Table 3-5, buildings 4500N and 4500S were classified as EHR because their BV scores were greater than 60.

## 3.3 REPRESENTATIVE SAMPLE OF BUILDING TYPE

After identifying exceptionally high risk buildings for evaluation, a representative sample of the remaining non-exempt buildings are to be evaluated. One to two percent of the non-exempt buildings will provide an adequate representative sample at sites with large inventories (>1000 non-exempt buildings). However, in the case of ORNL (161 non-exempt buildings), a 2 % sampling would result in a sample of three buildings for evaluation. Since there is not one correct way to choose a representative sample, an evaluation of a representative building from each of the 12 non-exempt building types, excluding the DNR model building type, was performed. FEMA-178 guidelines was used for non-exempt buildings meeting the DOE performance category criteria of PC1. DOE-STD-1020-94, *Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities*, will be used for non-exempt buildings meeting the performance category criteria for PC2, PC3, and PC4 (DOE 1996a). At the completion of the evaluations, the

remaining buildings in that building type will be compared to the evaluated building. Buildings within the building type judged to respond differently than the evaluated building may require additional evaluation.

Evaluations may consist of actual FEMA-178 or DOE-STD-1020-94 analyses or review of existing evaluations to determine if the evaluation criteria used is substantially equivalent to the criteria called out in FEMA-178. Due to the similarities between ORNL, ETTP, and the Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky, PGDP and ETTP analyses will also be considered.

The goal of these evaluations is to determine whether the building type is seismically vulnerable or not through a consistent evaluation approach.

## 3.4 BUILDINGS SELECTED FOR EVALUATION

There are 13 model building types in the non-exempt inventory at ORNL. To reduce the cost of building evaluations, buildings previously evaluated to criteria substantially equivalent to the RP 4 minimum evaluation procedure (FEMA-178), is allowed as described in TR-17 and reiterated in the DOE management plan. For DOE essential non-exempt buildings (PC-2, PC-3 and PC-4) the more stringent DOE-STD-1020-94, *Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities*, will be used (DOE 1996a). As suggested in TR-17, previously evaluated buildings meeting the minimum evaluation criteria should be included in the evaluated sample.

To further economize, representative samples of non-exempt buildings within the same model building type at the East Tennessee Technology Park (ETTP), Oak Ridge, Tennessee, the Oak Ridge Y-12 Plant (Y-12), Oak Ridge, Tennessee, and the Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky, that exhibit similar structural characteristics were extrapolated to ORNL non-exempt buildings. ETTP, ORNL, PGDP, and Y-12 are all located in a Moderate seismic zone.

The following structural characteristics were considered when extrapolating a representative sample from the ETTP, PGDP, and Y-12 sites to ORNL.

- Model Building Type - one-to-one extrapolation from the same model building type
- Building Layout - regular configuration versus irregular configuration
- Building Height
- Number of Above Ground Stories
- Building Stiffness and Weight
- Equipment Weight and Equipment Weight Distribution
- Area, $ft^2$
- Date of Construction
- Earthquake Ground Motion Used in the Evaluation of the Building
- Building Foundation Conditions
- Essential Designation (Performance Category Classification)

- Previous Evaluation Criteria
- Experience with Previous Evaluations

The response analysis for ORNL and the site-specific response spectra for soil equivalent to the response spectra derived from FEMA-178 was used for all evaluation extrapolations (Ahmed, Hunt, & Manrod 1995).

Based on the above approaches, one building evaluation was performed as part of this effort. Building 1506, model building type MB11, was evaluated to conclusively determine whether this building was a DNR building. Table 3-6 summarizes the strategy for satisfying evaluation requirements for ORNL non-exempt buildings by model building type.

**Table 3-6. Evaluation Strategy for ORNL Non-Exempt Model Building Type**

| Model Building Type | Evaluation Strategy |
|---|---|
| MB02 | Previous Analysis of Turnpike Building and ETTP EO 12941 Analysis of K-1001 |
| MB03 | Previous ETTP Analysis of K-1401 |
| MB04 | Previous ETTP Analyses of K-1037, K-1423, and K-1650 |
| MB05 | ETTP EO 12941 Analysis of K-1435-C |
| MB07 | Previous ORNL Analysis of 3025E |
| MB08 | ETTP EO 12941 Analysis of K-731 |
| MB09 | Previous PGDP Analysis of C-300 |
| MB10 | ETTP EO 12941 Analysis of K-601 |
| MB11 | EO 12941 Analysis of 1506 |
| MB13 | PGDP EO 12941 Analysis of C-720-K |
| MB14 | ETTP EO 12941 Analysis of K-1654-A |
| MB15 | ETTP EO 12941 Analysis of K-1004-A and Ongoing ORNL Analyses of 3019A, 3019B, and 7920 |
| MB16 | Previous ETTP Analysis of K-1037, K-1423, and K-1650, ETTP EO 12941 Analysis of K-731, and ETTP EO 12941 |

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# 4. EVALUATION PROCESS

The buildings identified in Chap. 3, *Selection of Buildings to Be Evaluated*, have been evaluated and the approach and results will be discussed in detail in this Chapter.

## 4.1 EVALUATION METHODS

For DOE buildings, the evaluation approach outlined in FEMA-178 was used for PC1 buildings while DOE-STD-1020-94 was used for the PC2 and PC3 buildings at ORNL. The FEMA-178 approach is designed to determine the potential earthquake-related risk to building occupants (life-safety). DOE-STD-1020-94 utilizes a graded approach and provides evaluation criteria for PC2 and PC3 buildings to meet life-safety, continued operation, and hazard confinement objectives.

One building, 1506, was evaluated as part of this effort. Previous ETTP analyses of K-1037, K-1401, K-1423, K-1650, and the Turnpike Building were reviewed and utilized as well as a previous analysis of PGDP building C-300. EO 12941 evaluations of K-601, K-731, K-1001, K-1004-A, K-1435-C, K-1654-A, and C-720-K were also used to complete the evaluation effort.

## 4.2 EVALUATION RESULTS

The results of the evaluations conducted for each model building type are described in the following sections.

### 4.2.1 Building Type MB02

The buildings included in this model building type are one story buildings with the exception of buildings 1001 and 6003 which are two story structures. To satisfy the evaluation requirement for this model building type the results of a FEMA-178 evaluation for ETTP building K-1001 was used for the two story structures and an evaluation of the Turnpike Building was used for the evaluation of the one story structures (CNPE 1997a and Allen & Hoshall 1991).

Based on the FEMA-178 analysis of K-1001 it was determined that buildings 1000 and 6003 are *seismically vulnerable*. Rehabilitation cost estimates were prepared for these buildings and are included in Appendix E and Table 6-2, *Estimated Costs for Non-Essential, Non-Evaluated Buildings*, for buildings 1000 and 6003, respectively.

There are 10 one story buildings in the MB02 building type. These buildings are sufficiently similar to the Turnpike Building. A previous analysis of the Turnpike Building was available and results extrapolated to these buildings. Based on the evaluation results of the Turnpike Building, it was determined that the one story MB02 buildings were *adequate* for life-safety. Rehabilitation costs for these buildings were not estimated in this effort.

### 4.2.2 Building Type MB03

There are 43 MB03 buildings at ORNL. To determine if MB03 buildings are seismically vulnerable, a previous analysis of building K-1401 at ETTP was reviewed and the results extrapolated to ORNL (CNPE 1997a). This review indicates that life-safety is *adequately* provided in the non-exempt buildings within the MB03 building type. Rehabilitation cost estimates for this building type were not prepared as part of this effort.

### 4.2.3 Building Type MB04

There are 22 MB04 buildings at ORNL. To assess the life-safety of the ORNL buildings in the MB04 category, previous analyses of ETTP buildings K-1037, K-1423, and K-1650 were reviewed. These reviews indicate that life-safety is *adequately* provided in the non-exempt buildings within MB04 (CNPE 1997a). Rehabilitation cost estimates for this building type were not prepared.

### 4.2.4 Building Type MB05

Twelve steel light frame buildings were identified as non-exempt at ORNL. This model building type includes pre-engineered or prefabricated buildings and are typically relatively small in size. DOE seismic performance categories PC1, PC2, and PC3 are represented in this model building type. Building K-1435-C at ETTP was evaluated using DOE-STD-1020-94 criteria and was found to be to provide *adequate* life-safety (CNPE 1997a). MB05 buildings at ORNL were judged to be similar in construction to K-1435-C and are therefore are *adequate* for life-safety. Rehabilitation cost estimates were not prepared for this model building type.

### 4.2.5 Building Type MB07

There are four buildings at ORNL that are classified as MB07. These buildings are constructed with steel frames and infill shear walls. A previous analysis of building 3025E was performed in support of the safety analysis report (SAR) effort at ORNL and was found to *adequately* meet DOE-STD-1020-94 criteria for a PC2 facility (ORNL 1997). Since the remainder of the MB07 buildings (3025W, 4505, and 4507) at ORNL are PC1 facilities, it has been determined these buildings are seismically *adequate* based on the 3025E evaluation. Rehabilitation cost estimates were not prepared for this model building type.

### 4.2.6 Building Type MB08

The primary lateral load carrying system of this building type are concrete moment frames. This construction type is no longer permitted in Moderate seismic zones. There are eight MB08 non-exempt buildings at ORNL. Included in these eight MB08 buildings are buildings 4500N and 4500S which were determined to be EHR per the determination described in Sect. 3.2, *EHR Building Identification*. A FEMA-178 evaluation of ETTP building K-731 was performed and the results demonstrated that K-731 is *seismically vulnerable* (CNPE 1997a). The amount of shear reinforcement supplied was less than that required by FEMA-178 criteria. Rehabilitation cost estimates were prepared for this building type. The rehabilitation cost estimates for 4500N and

4500S are included in Appendix E. The cost estimates for the remainder of the MB08 are included in Tables 6-1 and 6-2.

### 4.2.7 Building Type MB09

There are eight MB09 buildings at ORNL. Building C-300 was evaluated at PGDP and the results of the evaluation extrapolated for use at ORNL (CNPE 1997b). All MB09 buildings at ORNL were found to be *adequate* for life-safety. Rehabilitation cost estimates were not prepared as part of this effort.

### 4.2.8 Building Type MB10

Model building type MB10 are characterized by reinforced concrete frames with infill shear walls. ETTP building K-601 was evaluated and found to be *adequate* for life-safety (CNPE 1997a). The ORNL buildings in this building type are similar in construction to K-601 and are judged to be adequate for life-safety. Rehabilitation cost estimates were not prepared as part of this effort.

### 4.2.9 Building Type MB11

This building type is characterized as a precast/tilt-up concrete wall with a lightweight flexible diaphragm. There is one building at ORNL that is constructed in this manner, building 1506. A FEMA-178 evaluation was performed to ensure that the DNR designation was correct for this building type in a Moderate seismic area. The results of the evaluation conclude that the DNR classification is correct and that building 1506 is seismically vulnerable. A rehabilitation cost estimate was prepared as part of this effort and is included in Appendix E.

### 4.2.10 Building Type MB13

There are 13 non-exempt MB13 buildings at ORNL. PGDP building C-720-K was evaluated as part of the EO 12941 implementation effort at that site and is used to complete the evaluation requirements at ORNL (CNPE 1997b). The results of the PGDP evaluation demonstrate that MB13 type buildings are capable of providing life-safety to it's occupants as long as the bar joists are anchored to the reinforced masonry walls. Bar joists are anchored to the masonry walls at ORNL and, therefore, the MB13 provide *adequate* life-safety. No rehabilitation cost estimates for this model building type were prepared.

### 4.2.11 Building Type MB14

There are eight non-exempt MB14 buildings at ORNL. A FEMA-178 evaluation of ETTP building K-1654-A was performed as part of the EO 12941 implementation at that site and is suitable for use at ORNL (CNPE 1997a). The K-1654-A building was found to be *adequate* for life-safety and, therefore, all MB14 buildings at ORNL are *seismically adequate*. No rehabilitation cost estimates were performed for this model building type.

### 4.2.12 Building Type MB15

To assess the adequacy of life-safety of this building type, ETTP building K-1004-A was evaluated using DOE-STD-1020-94 criteria and found to be *seismically vulnerable* (CNPE 1997a). The weak link was the lack of a positive connection between the roof and walls. In addition to the evaluation of K-1004-A, ORNL buildings 3019A, 3019B, and 7920 are currently being evaluated in support of the SAR efforts for these buildings. Building 3019A, 3019B, and 7920 because of these evaluations are *adequate* for life-safety. The remainder of the MB15 building types are *seismically vulnerable* on the basis of the K-1004-A evaluation. Rehabilitation cost estimates for this model building type are included in Tables 6-1 and 6-2 with the exception of building 3019A, 3019B, and 7920.

### 4.2.13 Building Type MB16

There are two buildings at ORNL that are characterized as MB16. Buildings 5500 and 6010 each have dual systems that could not be categorized as predominantly one building type or another. These buildings have been given a building type of "Other" or MB16. Building 5500 is comprised of MB04 and MB08 building systems while building 6010 is comprised of MB04 and MB15 systems. MB04 has been determined to be adequate for life-safety. Since 5500 has a MB08 building system and 6010 has a MB15 system and both building systems have been determined to be *seismically vulnerable*, rehabilitation costs for these portions of their building systems have been estimated and are included in Table 6-2.

# 5. COST ESTIMATING PROCESS

The cost estimating process for evaluated, non-exempt and non-evaluated, non-exempt buildings at ORNL is described in this Chapter.

## 5.1 SEISMICALLY VULNERABLE BUILDINGS

For each evaluated building found to be seismically vulnerable, rehabilitation costs in four categories are to be estimated. Structural, non-structural, finishing, and project costs. Structural costs are costs associated with changes to the lateral force resisting system. Non-structural costs are costs associated with changes to other parts of the building and to building equipment, systems, and contents. Finishing costs are costs associated with removing and replacing finishes such as wallboard, paint, carpet, etc. Project costs are costs associated with design, testing, permit fees, cost of project management, etc.

Rehabilitation cost estimates were prepared using FEMA-156, *Second Edition, Typical Costs for Seismic Rehabilitation of Existing Buildings, Volume 1 - Summary*, and FEMA-157, *Second Edition, Typical Costs for Seismic Rehabilitation of Buildings, Volume II - Supporting Documentation*, and DOE specific guidance issued after this report was issued in November 1997 (FEMA 1994 and 1995, DOE 1998a and DOE 1998b). Estimated costs for each of the above categories for each of the evaluated buildings at ORNL are included in Appendix E. A code of C3 has been entered for the *Source of Cost Estimate* to refer to Option 2 cost estimating method used for deficient, evaluated buildings at ORNL.

A time adjustment factor of 1.10 was used for all cost estimates based on 1998 dollars. An inflation rate of 2 % from the 1993 cost estimates in FEMA-156 and FEMA-157 was assumed. A thirty percent adjustment factor for project costs was used per guidance issued by NIST.

The estimated cost of rehabilitating seismically vulnerable, evaluated buildings at ORNL is $22,825,100.

## 5.2 SEISMICALLY VULNERABLE, NON-EVALUATED BUILDINGS

Rehabilitation cost estimates for seismically vulnerable, non-evaluated buildings were prepared for each building in accordance with the guidance documents referenced in Sect. 5.1, *Seismically Vulnerable Buildings*. Cost estimates for those portions of the MB16 building types at ORNL that are seismically vulnerable were also prepared.

The estimated cost of rehabilitating seismically vulnerable, non-evaluated buildings at ORNL is $11,952,200.

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# 6. COSTS OF REHABILITATING NON-EVALUATED BUILDINGS

This Chapter provides the estimated costs as described in Chap. 5, *Cost Estimating Process*, for non-evaluated, seismically vulnerable buildings. As described in TR-17, costs associated with non-evaluated historic, essential, and all others are to be reported. ORNL has two historic buildings within in it's inventory. However, one of the historic buildings was exempt from the requirements of EO 12941 and the other historic building is categorized as a model building type that provides adequate seismic safety. Therefore, rehabilitation cost estimates for historic buildings are not included in the following discussion. Only essential and non-essential building types at ORNL will be reported in this Chapter.

## 6.1 ESTIMATED COSTS OF ESSENTIAL, NON-EVALUATED BUILDINGS

Table 6-1 summarizes, by model building type, the cost estimates in each of the four cost categories for essential, non-evaluated buildings at ORNL including the vulnerable portions of the MB16 buildings.

## Table 6-1. Estimated Costs for Essential, Non-Evaluated Buildings

| Seismicity Area | No. of Bldgs. | Area, $m^2$ | Estimated Costs | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cost per Square Meter | | | | Total Cost | | | | |
| | | | Structural Costs, $/m^2 | Non-Structural Costs, $/m^2 | Finishing Costs, $/m^2 | Project Costs, $/m^2 | Structural Costs, $ | Non-Structural Costs, $ | Finishing Costs, $ | Project Costs, $ | Total Costs, $ |
| Moderate | 11 | 7026 | 292.70 | 28.14 | 28.14 | 104.68 | 2056500 | 197700 | 197700 | 735500 | 3187400 |

## 6.2 ESTIMATED COSTS OF NON-ESSENTIAL, NON-EVALUATED BUILDINGS

Table 6-2 summarizes, by model building type, the cost estimates in each of the four cost categories for non-essential, non-evaluated buildings at ORNL including the vulnerable portions of the MB16 buildings.

## Table 6-2. Estimated Costs for Non-Essential, Non-Evaluated Buildings

| Model Building Type | No. of Bldgs. | Area, $m^2$ | Estimated Costs | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cost per Square Meter | | | | Total Cost | | | | |
| | | | Structural Costs, $/m^2 | Non-Structural Costs, $/m^2 | Finishing Costs, $/m^2 | Project Costs, $/m^2 | Structural Costs, $ | Non-Structural Costs, $ | Finishing Costs, $ | Project Costs, $ | Total Costs, $ |
| MB02 | 1 | 681 | 84.76 | 18.36 | 18.36 | 7.05 | 57800 | 12500 | 12500 | 24800 | 107600 |
| MB08 | 5 | 27292 | 145.30 | 18.32 | 18.32 | 54.59 | 3965600 | 500000 | 500000 | 1489800 | 6455400 |
| MB15 | 8 | 11803 | 106.84 | 18.33 | 18.33 | 43.04 | 1261000 | 216400 | 216400 | 508000 | 2201800 |

# 7. COSTS OF REHABILITATING LEASED BUILDINGS

There are six contractor leased buildings included in the ORNL building inventory. Five of these buildings are non-exempt from the requirements of EO 12941. Evaluation of the non-exempt leased buildings are not required. As directed to the DOE field offices, if the leased space does not meet DOE seismic safety standards, then the lease is not to be renewed. The cost impact of rehabilitating leased buildings was not estimated for LMER leased buildings.

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# 8. ADDITIONAL INFORMATION

No additional information is provided.

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# APPENDIX A

# ORNL LEASED BUILDINGS

# ORNL LEASED BUILDINGS

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 101 MID | 101 Midway Lane |
| 1060 COMM | 1060 Commerce Park Drive |
| FEDC | Fusion Energy Design Center |
| GERMANTOWN, MD | Trevion II |
| 78 MITCHELL | 72-78 Mitchell Road |
| CAPITAL GALLERY | Capital Gallery Office Complex |

# APPENDIX B

# INITIAL BUILDING LIST - ORNL

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 1054 | Engineering Office Trailer |
| 1552 | Water Monitoring Equipment Building |
| 1560 | East Greenhouse |
| 2032 | Manhole 240 Monitoring Station |
| 2034 | Manhole 95 Monitoring Station |
| 2099 | Monitor Control Station for 2066 |
| 2521 | Sewage Treatment Plant |
| 2546 | Coal Pile Monitoring Station |
| 2639 | Coal Yard Runoff Treatment Building |
| 2642 | Sentry Post #7 (S. End of Third St.) |
| 2650 | Evaporator Chemical Shed |
| 2653 | Valve House |
| 2657 | Manhole 243 Monitor |
| 2658 | F-4005 Monitoring Station |
| 3000 | 13.8 kV Substation |
| 3091 | Filters for Building 3019 |
| 3092 | Off-Gas Facility |
| 3098 | Filter Facility for LITR & BSR |
| 3123 | Emergency Generator for Building 3019 |
| 3125 | Emergency Generator for Building 3039 |
| 3130 | Waste Operations Control Center |
| 3137 | Surface Science Laboratory |
| 3143 | ORR Demineralization System |
| 3153 | Envelope Systems Research Apparatus |
| 3154 | Manhole 112 Monitor House |
| 3155 | Manholes 114 & 234 Monitor |
| 3508 | Chemical Technology Alpha Laboratory |
| 3608 | Waste Water Treatment Control Center |
| 5000 | Main Portal - Security Post 1 |
| 5554 | Electrical Substation for Building 5505 |
| 6554 | Gravel Drying Shed |
| 7073 | Air Monitoring Station |
| 7075 | Waste Chemical Storage Area |
| 7514 | Filter House for Building 7503 |
| 7572 | CH-TRU Waste Storage Facility |
| 7574 | Waste Storage Facility |
| 7621 | Clark Center Office |
| 7623 | Clark Center Restrooms |
| 7706 | Cooler Tower Shielding Facility |
| 7831 | Solid Waste Storage Compactor Facililty |
| 7848 | EPICORE II Storage Building (SWSA 6) |
| 7854 | Drilling Equipment Storage for Building 7852 |
| 7858 | White Oak Lake Storage Building |
| 7859 | Sample Equipment Storage Building |
| 7866 | Sampling Station |
| 7869 | Stream Flow Monitoring Station |
| 7871 | Stream Flow Monitoring Station |
| 7872 | Stream Flow Monitoring Station |
| 7873 | First Creek Weir |
| 7971 | HOG Filter Facility |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 7975 | Water Monitoring Storage Facility |
| 0813 | Field Laboratory #1 |
| 0814 | Field Laboratory #2 |
| 0817 | Ozone Generator Building |
| 0818 | Atmospheric Instrument Trailer |
| 0819 | Farm Implement Storage Buildin |
| 0822 | ESD/NOAA USAF Instru Trl |
| 0855 | Operations Building 0800 Area |
| 0857 | Goat Building |
| 0858 | Sycamore Plantation Trailer |
| 0901 | 161 kV Substation |
| 0903 | Bethel Valley Church |
| 0907 | Walker Branch Watershed Lab |
| 0934 | Walk Br Weir Sub-Sur Weir Ints |
| 0937 | ATDD/NOAA Rain Gage 2 Instr |
| 0940 | ATDD/NOAA Instrument Bldg 1 |
| 0941 | ATDD/NOAA Instrument Bldg 2 |
| 0942 | ATDD/NOAA USAF Trailer |
| 0943 | ATDD, NOAA Facility |
| 0950 | Walker Branch East Weir Instr. House |
| 0951 | Walker Branch West Weir Instr. House |
| 0955 | Walker Brance Storage Building |
| 0957 | Sample Storage Building |
| 0961 | Ornl Visitor Overlook |
| 0963 | White Oak Creek Headquarters Monitor Station |
| 0964 | Waste Inspection Building |
| 1000 | Engineering |
| 1053A | Construction Eng Office |
| 1053B | Construction Engineering Offic |
| 1059 | Health Effects Information |
| 1061 | Health Protection Services Fac |
| 1062 | West Office Building |
| 1503 | Plant Sciences Lab |
| 1504 | Aquatic Ecology Lab |
| 1505 | Environmental Science lab |
| 1506 | Controlled Envirnonment & Animal Building |
| 1507 | Life Sciences Data Analysis Bl |
| 1508 | Aquatic Storage Building |
| 1509 | Environmental Engineering Faci |
| 1542 | Cylinder Storage Shed |
| 1561 | West Greenhouse |
| 1564 | 1564 Trailer |
| 1565 | 1565 Trailer |
| 2000 | Solid State Lab Annex & Quality Assurance & Inspection |
| 2001 | Information Center Complex/Synthetic Fuel Storage |
| 2003 | Process Water Cont Station |
| 2007 | Health Physics Calibration Lab |
| 2008 | HP Tech Internal Dosimetry Lab/Whole Body Counter |
| 2009 | Cafeteria Warehouse |
| 2010 | Cafeteria |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 2011 | Mechanical Properties Lab |
| 2013 | West Maintenance Service Center |
| 2016 | West Portal Security HQ Annex |
| 2017 | East Research Servic Satellite |
| 2018 | Elect & AC Service Center |
| 2019 | Solar Energy Lab/Laser Lab |
| 2024 | Quality Assurance & Inspection/Information Center |
| 2026 | Hi-Rad Level Analytical Lab |
| 2029 | Information Centr Com. Annex C |
| 2030 | Mobile Office Unit |
| 2033 | Measurement & Controls Support Facility |
| 2069 | Change House |
| 2087 | Storage I-E |
| 2088 | Emerg Generator B 2000 |
| 2092 | Storage |
| 2093 | Enviromental Storage Building |
| 2101 | WMO Health&Hyiegene Support |
| 2500 | Protective Services Guard & Fire Headquarters |
| 2506 | Fabrication Shop & Timekeeping |
| 2510 | Air Compressor Buillding |
| 2517 | Personnel Development & Systems Department |
| 2518 | P & E Division Offices |
| 2519 | Steam Plant |
| 2523 | Decontamination Laudry |
| 2523A | Decontamination Laundry Annex |
| 2525 | Fabrication Department Shop A |
| 2528 | Coal Research Lab |
| 2531 | Radioactive Waste Evaporator |
| 2532 | Hi-Level Waste Stor Cooling Pu |
| 2536 | Coal Sample Preparation Bldg. |
| 2537 | Evaporator Service Tank & Control Room for Building 2531 |
| 2540 | Steam Plant Substation |
| 2542 | Gas Storage Facility |
| 2547 | Gen Machine Shop |
| 2549 | Storage Bluilding Steam Plant |
| 2568 | Cell Vent & Off-Gas Filter - 2531 |
| 2572 | Emergency Generator 2500 |
| 2609 | Sentry Post No. 3 |
| 2621 | ES&H Offices |
| 2628 | Fire Protect Maint & Storage |
| 2638 | Steam Plant Control Building |
| 2640 | Sentry Post #6 SW Vehicle Gate |
| 2641 | Sentry Post #6B (Coal Yard Del |
| 2643 | Chlorinator Building |
| 2644 | Coal Yard Runoff Treatment Plt |
| 2647 | Construction Engineering Trail |
| 2648 | Fire Training Facility |
| 2649 | Transported Waste Receiving Facility |
| 2652A | 2652A Office Trailer |
| 2652B | 2652B Office Trailer |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 2652C | 2652C Office Trailer |
| 2654 | Sewage Digester Building |
| 2656 | Sewage Trt Plt-Wtr Monitor Sta |
| 2660 | Operation Compliance Training |
| 2661 | ORNL Regional Science Ed Ctr |
| 3001 | Graphite Reactor |
| 3002 | Filter House - Graphite Reactor |
| 3003 | Surface Monitoring & Characterization Lab |
| 3004 | Water Demineralizer |
| 3005 | Low-Intensity Testing Reactor |
| 3008 | Source & Spec Mat Vault |
| 3009 | Pump House for Building 3010 |
| 3010 | Bulk Shielding Reactor |
| 3010A | BSR Facility Building |
| 3012 | Rolling Mill |
| 3013 | Geo. Disp. Lab |
| 3017 | Chem. Tech. Div. Annex |
| 3019A | Radiochemical Processing Pilot - Analytic |
| 3019B | Radiochemical Processing Pilot Plant |
| 3025E | M & C Physical Examination - Hot Cells |
| 3025W | Solid State Division Offices |
| 3026C | Radioisotope Development Laboratory |
| 3026D | Dismantling and Exam - Hot Cells |
| 3027 | Safeguard (SNM) Vault |
| 3028 | Radioisotope Production Lab |
| 3029 | Radioisotope Production Lab-B |
| 3030 | Radioisotope Production Lab-C |
| 3031 | Radioisotope Production Lab-D |
| 3032 | Radioisotope Production Lab-E |
| 3033 | Radioisotope Production Lab-F |
| 3033A | Radioisotope Prod Lab Annex |
| 3034 | Radioisotope Area Services |
| 3036 | Isotope Area Stor & Servic Bld |
| 3037 | Chem Tech Offices |
| 3038 | Radioisotope Laboratory |
| 3042 | Oak Ridge Research Reactor |
| 3044 | Special Materials Machine Shop |
| 3047 | Isotope Technology Building |
| 3074 | Interim Manipulator Repair Facility |
| 3080 | Reactor Exper Control Room |
| 3082 | Stor Misc Material |
| 3083 | Neutron Spectrometer Station 1 |
| 3084 | Neutron Spectrometer Sta 2 |
| 3085 | Pump House-Orr |
| 3088 | Bulk Shield Reactor Storage |
| 3095 | Reactor Area Equipment Building |
| 3100 | Source & Sp Mat Vault |
| 3101 | Storage Shed |
| 3104 | West Research Service Center |
| 3105 | Waste Operations Health Physics Office |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 3107 | 25 Meter Target Hse. |
| 3108 | Cell & Hood Vent Filters |
| 3111 | Sentry Post No 8b |
| 3112 | Misc. Storage Building |
| 3114 | Roof Test Development Lab |
| 3115 | Solid State Off. |
| 3116 | Nitrogen Cylinder Storage Bldg |
| 3118 | Radioisotope Prod Lab-H |
| 3119 | Heat Exchanger and Pump House |
| 3121 | Cell Off Gas Filter Hse for |
| 3127 | Non-Nuclear Res. Matl'S Vault |
| 3129 | Personnel Monitoring Station |
| 3135 | Sentry Post - 8D |
| 3136 | Mock Up Test Facility |
| 3138 | Roof Thermal Test Fac |
| 3141 | S Pass Shelter Bethel Valley R |
| 3142 | S Passenger Shelter Bethel Val |
| 3144 | Roof Test Center |
| 3145 | LLW Collection Building |
| 3147 | Office for Efficiency Renewable Research |
| 3150 | Solid State Research Facility |
| 3156 | Energy Office & Support Fac |
| 3158 | N Monitoring Bldg 3025/3026 |
| 3159 | S Monitoring Bldg 3500/4500 |
| 3500 | Instrument & Controls (East) |
| 3501 | Sewage Pumping Sta. |
| 3502 | East Research Service Center |
| 3502B | Data Concen 4 WOCC DAS 3502 |
| 3503 | High Radiation-Level Engineering Laboratory |
| 3504 | Geoscience Laboratory |
| 3505 | Metal Recovery Facility |
| 3515 | Fission Prod Lab No 1 |
| 3517 | Fission Products Dev Lab |
| 3518 | Proc Waste Water Trtmt |
| 3523 | I&C Storage |
| 3525 | High Rad Level Exam Lab. |
| 3531A | Trailer |
| 3531B | Trailer |
| 3534 | Liquid Metal Cleaning Fac |
| 3534A | Health Physics Trailer |
| 3534B | Health Physics Trailer |
| 3541 | MSR Process Dev. Lab. |
| 3542 | Str Bldg For 3505 & 3517 |
| 3543 | Msr Dev Lab |
| 3544 | Proc Waste Treatment Plt |
| 3544A | ORNL WstWtr Treatment Fac |
| 3544B | Filter Press Building |
| 3546 | I & C Office Annex |
| 3550 | Research Materials Preparation |
| 3587 | Instrument Laboratory Annex/Clothing Stores |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 3592 | Coal Conversion Facility |
| 3594 | Waste Mgmt Stor Bldg |
| 3598 | Emerg Gen For 3500 Area |
| 3602 | Cylinder Tank Stor Bldg 3525 |
| 3605 | TSD Storage Building |
| 3606 | South Office Annex |
| 3607 | Cask Tool Stor |
| 3610 | Storage Building |
| 3610A | Flammable Storage Building |
| 3618 | WC-10 Building |
| 4005 | Sentry Post Portal |
| 4007 | Waste Operations Support Facil |
| 4500N | Central Research & Administration |
| 4500S | Central Research & Administration |
| 4501 | Pumping Station |
| 4505 | Experimental Engineering |
| 4507 | High Radiation Level Chemical Development Laboratory |
| 4508 | Metals & Ceramics Laboratory |
| 4509 | Compressor House |
| 4512 | Lab Emergency Response Center |
| 4514 | Equipment Building - Html |
| 4515 | High Temperature Material Laboratory |
| 4557 | Sentry Post #7- South Parking |
| 4558 | 4558 Office Trailer |
| 5002 | Guest Users Facility |
| 5500 | High Voltage Accelerator Laboratory |
| 5500A | M & C South Office Annex |
| 5505 | Transuranium Research Laboratory |
| 5506 | East Portal Building - Security Post 11 |
| 5507 | Electron Spectrometer Fac |
| 5510 | Analytical Mass Spectrometer Lab |
| 5510A | Inorganic Mass Spectrometer Lab |
| 5553 | Sentry Post 1e |
| 6000 | Holifield Heavy Ion Research Facility |
| 6000B | Atomic Physics Research Laboratory |
| 6003 | Modular Building for Offices |
| 6005 | Gas Compressor Hse 6000 |
| 6007 | Joint Institute for Heavy Ion Research |
| 6008 | JIHIR Office/Lab Facility |
| 6010 | Electron Linear Accelerator |
| 6011 | Computing & Telecommunications Building |
| 6012 | Computer Science Research Fac. |
| 6016 | Outfall 314 Dechlorination System |
| 6025 | Engineering Physics Office/Lab Building |
| 6026A | 6026A Office Trailer |
| 6026B | 6026B Office Trailer |
| 6026C | 6026C Office Trailer |
| 6026D | 6026D Office Trailer |
| 6026E | 6026E Office Trailer |
| 6026F | 6026F Trailer |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 6026G | Office Trailer, Double Wide |
| 6556A | ER Field Operations |
| 6556B | ER Field Operations |
| 6556C | ER Field Operations |
| 6556D | ER Field Operations |
| 6556E | ER Field Operations |
| 6556G | ER Field Operations |
| 6556J | Trailer, Single Wide |
| 6556K | Trailer, Single Wide |
| 6556L | Trailer, Single Wide |
| 6556M | ER Field Operations |
| 6556Q | ER Field Operations |
| 6556R | ER Field Operations |
| 6556S | ER Field Operations |
| 6556-ST-9 | Storage Trailer |
| 6556T | ER Field Operations |
| 7001 | General Stores |
| 7002 | Garage & Iron Working Shop |
| 7003 | Welding & Brazing Shop |
| 7005 | Lead Shop |
| 7006 | Paint Stores |
| 7007 | Paint Shop |
| 7009 | Carpenter Shop |
| 7010 | Dry Lumber Storage |
| 7012 | Central Mechanical Shop |
| 7013 | Acid Chem & Flam Liq Stg |
| 7015 | Metal Storage & Cutting Facility |
| 7018 | Salvage & Reclamation Facility |
| 7019 | Haz Materials Storage |
| 7020 | Interim Grnds Equip Stg |
| 7020A | Decommission and Segregation Facility |
| 7021 | Fab Equip Storage |
| 7025 | Tritium Target Prep Facility |
| 7026 | M&C Storage |
| 7031 | Fabrication Storage Shed |
| 7033 | Electrical Material Strg. |
| 7035 | Bldg Maint/Mat & Equip |
| 7035A | Storage |
| 7035B | Storage |
| 7035C | Storage |
| 7035D | Storage |
| 7037 | Cold Storage Bldg |
| 7038 | Synthetic Fuel Storage Facilit |
| 7039 | Material Staging Facility |
| 7040 | Gas Cylinder Storage |
| 7041 | Cold Storage Bldg |
| 7042 | Core Storage Facility |
| 7043 | Passenger Shelter (W of 7000) |
| 7053 | Personnel Shelter |
| 7055 | Storage Bldg. (Pickling Vats) |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 7057 | Sandblast Cleaning Fac |
| 7058 | Machine Auxiliaries Strg |
| 7060 | Steel Yard Office |
| 7061 | Hlth.Phys. Envrn. Stg. |
| 7062 | Storage-Miscel Materials |
| 7063 | Emerg Gen For Bldg 7003 |
| 7065 | Rigger Equip Storage |
| 7066 | Grounds Maint.Storage |
| 7067 | Training Facility |
| 7067A | Office Trailer |
| 7069 | Gas Service Facility |
| 7070 | Storage Shed |
| 7072 | Sentry Post 20b |
| 7074 | Sentry Post #20C-PedGte 7012 |
| 7077 | Grounds & Laborers Building |
| 7077A | Reservation Services Office Trailer |
| 7078A | 7078A EROffice Trailer |
| 7078B | Bechtel Jacobs Office Trailer |
| 7078C | 7078C ER Office Trailer |
| 7078D | Trailer |
| 7078E | Trailer |
| 7078F | Trailer |
| 7079 | Bottle Storage Building |
| 7082 | Salt Storage Building |
| 7083 | ESD Model Airplane Shop |
| 7500 | Nuclear Safety Pilot Plant |
| 7503 | CPAF Headquarters |
| 7505 | Cpaf Headquarters |
| 7506 | CPAF Carpenter Shop |
| 7507 | Substores |
| 7507W | Mixed Hazardous Waste Stor Pad |
| 7509 | MSRE Office Building |
| 7516 | Field Service Shop |
| 7518 | Concrete Storage Pad |
| 7553 | Pump House - Tsf Water |
| 7554A | MK-Ferguson Trailer |
| 7555 | Diesel Gnerator House for Building 7503 |
| 7567 | Intermediate Level Waste Pumping Station |
| 7569 | Collection Tank Melton |
| 7582 | Liquid/Gaseous Waste Support |
| 7600 | Containment Building |
| 7601 | Office Building |
| 7602 | Engineering Integrated Process Demo |
| 7603 | Experimental Engineering - Remote Operations & Maintenance |
| 7604 | Utility Building |
| 7605 | Storage Building |
| 7606A | Robotics R&D Lab |
| 7606B | Maintenance Building |
| 7607 | Egcr River Pump Station |
| 7608 | Component Dev-R&Ps |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 7609 | Stack Monitoring House |
| 7610 | Storage House - R&Ps |
| 7611 | Guard House - CFRP Security Post 30 |
| 7615 | REDC Storage |
| 7651 | Storage Shed |
| 7652 | Hazardous Waste Storage Building |
| 7653 | Chemical Waste Storage Building |
| 7654 | Hazardous Waste Storage Building |
| 7661 | Electrical Utility Building |
| 7666 | Environmental Emer. Resp_Fac |
| 7666A | Trailer, Dbl Wide-7666A Area |
| 7668 | Mixed Waste Storage Facility |
| 7702 | Control House Tower Shielding Facility |
| 7703 | Hoist House-Tsf |
| 7704 | Control House-Tsf |
| 7705 | Pump House-Tsf |
| 7707 | Battery House-Tsf |
| 7708 | Reactor Shield Storage-Tsf |
| 7709 | Health Physics Res. Reac. |
| 7710 | DOSAR Facility - HPRR |
| 7712 | Dosar Low-Eng Accelerator |
| 7716 | Filter Pump House Main. Pool |
| 7720 | Civil Defense Bunker |
| 7735 | Radiation Calibration Laboratory |
| 7740 | Radio Trans. Fac. (Melton |
| 7751 | Sen Post 22 Tsf Exclu |
| 7752 | Sen Post 21 Tsf Perimeter |
| 7756 | Meter House Hpm |
| 7758 | HFIR Parts Storage |
| 7802C | Deep Monitoring Well #1 |
| 7802D | Deep Monitoring Well #2 |
| 7802F | Garage at SWSA5 |
| 7803 | Lab Trailer |
| 7811 | Geosciences Storage Building |
| 7819 | Interim Decontamination |
| 7823 | Underground Storage Bldg |
| 7824 | Waste Exam & Assay Facility |
| 7824A | WEAF Support Facility |
| 7826 | TRU Drum Storage |
| 7830 | LLW Storage Tank Facility |
| 7831A | Solid Waste Compactor |
| 7833 | Alpha Greenhouse Facility. |
| 7834 | Retrievable Waste Storage Facility |
| 7841A | Decon Trailer-SWSA 5 Area |
| 7842 | Storage Shelter Swsa #6 |
| 7847 | Vehicle/Personnel Monitor Sta |
| 7849 | White Oak Crk Weir & Gaging St |
| 7852 | Shale Fracturing Batch Plant |
| 7853 | Gen Storage Bldg 7852 |
| 7855 | Concrete Cask Storage Facility for HRL Retrievable Waste |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 7856 | MVST Capacity Increase Project |
| 7857 | IWMF Monitoring Station |
| 7859A | Sample Storage Building |
| 7859B | Sample Storage Building |
| 7860 | New Hydrofracturing Facility |
| 7863 | Gen Strg For Bldg 7860 |
| 7874 | ESD Stor Bldg (SW SWSA 4) |
| 7875 | Monitoring Storage Bldg. |
| 7876 | Office Trailer |
| 7877 | LLW Solidifaction Facility |
| 7878 | SWSA 6 Staging Facility |
| 7879 | TRU/LLW Staging Facility |
| 7881 | Guard Post 24 (W End of Plant) |
| 7883 | RH-TRU Waste Storage Bunker |
| 7900 | High Flux Isotope Reactor |
| 7901 | Elec Bldg For 7900 |
| 7903 | Cooling Twr Equip Bldg |
| 7910 | Office Building for Building 7900 |
| 7912 | Fan Shed for 7911 |
| 7914 | Eqp & Parts Strge Bldg |
| 7914A | Equipment Storage |
| 7915 | Oper. Stor. Bldg. |
| 7916 | HFIR Cooling Tower Softener |
| 7917 | Research Reactors Division Office Building |
| 7918 | REDC Office & Training Facilit |
| 7919 | Process Waste Monitor (HFIR) |
| 7920 | Transuranium Processing Facility |
| 7921 | Emerg Gen Bldg (For B7920 |
| 7922 | Breeching & Fan Area for 7920 |
| 7924A | Storage Building for 7920 |
| 7924-B | Storage Building |
| 7930 | Radiochemical Engineering Development Center |
| 7931 | Emergency Generator for Building 7930 |
| 7932 | Waste Sampling Building for Building 7930 |
| 7933 | 7933 Storage Trailer |
| 7934 | Photographic Waste Storage Facility |
| 7935 | Waste Storage Fac |
| 7936 | Storage Facility for REDC |
| 7952 | Low Lev Waste Pmp Sta |
| 7953 | Hprr Pump House |
| 7953A | Trailer |
| 7953B | Trailer |
| 7953C | Trailer |
| 7955 | Sentry Post No. 19A |
| 7957 | Office Trailer For 7920 |
| 7958 | Sentry Post 23 - Hprr |
| 7960 | Cask Tool Stor |
| 7962 | Neutron Users Office & Laboratory |
| 7964A | Triple Wide Office Trailer |
| 7964B | Triple Wide Office Trailer |

# INITIAL BUILDING LIST - ORNL

| UNIQUE IDENTIFIER | DESCRIPTION |
|---|---|
| 7964C | Trailer, Office |
| 7964D | 7964D Office Trailer |
| 7964E | 7964E Conference Trailer |
| 7964F | 7964F Office Trailer |
| 7964G | Office Trailer, Triplewide |
| 7965A | Trailer, Office |
| 7965B | 7965B Office Trailer |
| 7965C | 7965C Office Trailer |
| 7966 | LLW Monitoring&Collection Sta |
| 7967B | Subsurface Wier Instr Bldg |
| 7968 | Trailer |
| 7969 | Haz Material Enclosure |
| 910003 | Shed D Butler |
| 910004 | Barn D |
| 910006 | Barn E |
| 910007 | Barn Twin I |
| 910009 | Barn B |
| 910010 | Barn Solway |
| 910022 | Guard House Filter Plant |
| 910023 | Barn Freels |
| 910024 | White Barn |
| 910025 | Silo 14x41 |
| 910027 | Sheep Barn |
| X176230 | 3515 Area Trailer |
| X185248 | X185248 Trailer-SWSA #6 |
| X185249 | X185249 Trailer-SWSA #6 |
| X186600 | Trailer-7002 Area |
| X186689 | Trailer Mobile House Unit-2531 |

# APPENDIX C

# ORNL EXEMPT BUILDINGS

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 2032 | 47 | 001 | M | 6 | 1 | E1 |
| 8900 | 2034 | 47 | 001 | M | 6 | 1 | E1 |
| 8900 | 2521 | 47 | 001 | M | 137 | 1 | E1 |
| 8900 | 2546 | 47 | 001 | M | 5 | 1 | E1 |
| 8900 | 2650 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 2657 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 2658 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3000 | 47 | 001 | M | 137 | 1 | E1 |
| 8900 | 3091 | 47 | 001 | M | 56 | 1 | E1 |
| 8900 | 3092 | 47 | 001 | M | 167 | 1 | E1 |
| 8900 | 3098 | 47 | 001 | M | 114 | 1 | E1 |
| 8900 | 3123 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 3125 | 47 | 001 | M | 44 | 1 | E1 |
| 8900 | 3143 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 3153 | 47 | 001 | M | 214 | 1 | E1 |
| 8900 | 5554 | 47 | 001 | M | 31 | 1 | E1 |
| 8900 | 7073 | 47 | 001 | M | 6 | 1 | E1 |
| 8900 | 7623 | 47 | 001 | M | 89 | 1 | E1 |
| 8900 | 7706 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 7858 | 47 | 001 | M | 23 | 1 | E1 |
| 8900 | 7869 | 47 | 001 | M | 14 | 1 | E1 |
| 8900 | 7871 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 7872 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 7873 | 47 | 001 | M | 18 | 1 | E1 |
| 8900 | 7971 | 47 | 001 | M | 80 | 1 | E1 |
| 8900 | 7975 | 47 | 001 | M | 2 | 1 | E1 |
| 8900 | 0857 | 47 | 001 | M | 33 | 1 | E1 |
| 8900 | 0858 | 47 | 001 | M | 27 | 1 | E1 |
| 8900 | 0901 | 47 | 001 | M | 80 | 1 | E1 |
| 8900 | 0903 | 47 | 001 | M | 147 | 1 | E1 |
| 8900 | 0937 | 47 | 001 | M | 16 | 1 | E1 |
| 8900 | 0943 | 47 | 001 | M | 61 | 1 | E1 |
| 8900 | 0950 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 0951 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 0961 | 47 | 001 | M | 465 | 1 | E1 |
| 8900 | 0963 | 47 | 001 | M | 9 | 1 | E1 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 1542 | 47 | 001 | M | 18 | 1 | E1 |
| 8900 | 2003 | 47 | 001 | M | 25 | 1 | E1 |
| 8900 | 2009 | 47 | 001 | M | 414 | 1 | E1 |
| 8900 | 2087 | 47 | 001 | M | 22 | 1 | E1 |
| 8900 | 2088 | 47 | 001 | M | 8 | 1 | E1 |
| 8900 | 2092 | 47 | 001 | M | 10 | 1 | E1 |
| 8900 | 2532 | 47 | 001 | M | 15 | 1 | E1 |
| 8900 | 2536 | 47 | 001 | M | 54 | 1 | E1 |
| 8900 | 2540 | 47 | 001 | M | 27 | 1 | E1 |
| 8900 | 2542 | 47 | 001 | M | 19 | 1 | E1 |
| 8900 | 2549 | 47 | 001 | M | 186 | 1 | E1 |
| 8900 | 2572 | 47 | 001 | M | 19 | 1 | E1 |
| 8900 | 2648 | 47 | 001 | M | 46 | 1 | E1 |
| 8900 | 2654 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 2656 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3004 | 47 | 001 | M | 343 | 1 | E1 |
| 8900 | 3008 | 47 | 001 | M | 42 | 1 | E1 |
| 8900 | 3084 | 47 | 001 | M | 18 | 1 | E1 |
| 8900 | 3085 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 3100 | 47 | 001 | M | 114 | 1 | E1 |
| 8900 | 3108 | 47 | 001 | M | 55 | 1 | E1 |
| 8900 | 3112 | 47 | 001 | M | 18 | 1 | E1 |
| 8900 | 3116 | 47 | 001 | M | 4 | 1 | E1 |
| 8900 | 3119 | 47 | 001 | M | 67 | 1 | E1 |
| 8900 | 3121 | 47 | 001 | M | 14 | 1 | E1 |
| 8900 | 3127 | 47 | 001 | M | 84 | 1 | E1 |
| 8900 | 3129 | 47 | 001 | M | 45 | 1 | E1 |
| 8900 | 3138 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 3141 | 47 | 001 | M | 6 | 1 | E1 |
| 8900 | 3142 | 47 | 001 | M | 6 | 1 | E1 |
| 8900 | 3145 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3158 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3159 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3501 | 47 | 001 | M | 18 | 1 | E1 |
| 8900 | 3502B | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 3515 | 47 | 001 | M | 28 | 1 | E1 |
| 8900 | 3518 | 47 | 001 | M | 101 | 1 | E1 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 3534 | 47 | 001 | M | 42 | 1 | E1 |
| 8900 | 3598 | 47 | 001 | M | 20 | 1 | E1 |
| 8900 | 3602 | 47 | 001 | M | 11 | 1 | E1 |
| 8900 | 3607 | 47 | 001 | M | 63 | 1 | E1 |
| 8900 | 3610A | 47 | 001 | M | 28 | 1 | E1 |
| 8900 | 4514 | 47 | 001 | M | 60 | 1 | E1 |
| 8900 | 6005 | 47 | 001 | M | 195 | 1 | E1 |
| 8900 | 6016 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 7010 | 47 | 001 | M | 297 | 1 | E1 |
| 8900 | 7013 | 47 | 001 | M | 156 | 1 | E1 |
| 8900 | 7019 | 47 | 001 | M | 89 | 1 | E1 |
| 8900 | 7020 | 47 | 001 | M | 156 | 1 | E1 |
| 8900 | 7020A | 47 | 001 | M | 110 | 1 | E1 |
| 8900 | 7021 | 47 | 001 | M | 99 | 1 | E1 |
| 8900 | 7025 | 47 | 001 | M | 57 | 1 | E1 |
| 8900 | 7031 | 47 | 001 | M | 84 | 1 | E1 |
| 8900 | 7033 | 47 | 001 | M | 355 | 1 | E1 |
| 8900 | 7037 | 47 | 001 | M | 56 | 1 | E1 |
| 8900 | 7038 | 47 | 001 | M | 59 | 1 | E1 |
| 8900 | 7040 | 47 | 001 | M | 320 | 1 | E1 |
| 8900 | 7041 | 47 | 001 | M | 743 | 1 | E1 |
| 8900 | 7042 | 47 | 001 | M | 743 | 1 | E1 |
| 8900 | 7055 | 47 | 001 | M | 130 | 1 | E1 |
| 8900 | 7061 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 7063 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 7065 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 7066 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 7070 | 47 | 001 | M | 465 | 1 | E1 |
| 8900 | 7079 | 47 | 001 | M | 15 | 1 | E1 |
| 8900 | 7082 | 47 | 001 | M | 139 | 1 | E1 |
| 8900 | 7518 | 47 | 001 | M | 167 | 1 | E1 |
| 8900 | 7553 | 47 | 001 | M | 10 | 1 | E1 |
| 8900 | 7582 | 47 | 001 | M | 557 | 1 | E1 |
| 8900 | 7600 | 47 | 001 | M | 6772 | 1 | E1 |
| 8900 | 7604 | 47 | 001 | M | 411 | 1 | E1 |
| 8900 | 7605 | 47 | 001 | M | 1126 | 1 | E1 |
| 8900 | 7607 | 47 | 001 | M | 28 | 1 | E1 |
| 8900 | 7608 | 47 | 001 | M | 49 | 1 | E1 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 7609 | 47 | 001 | M | 72 | 1 | E1 |
| 8900 | 7610 | 47 | 001 | M | 35 | 1 | E1 |
| 8900 | 7615 | 47 | 001 | M | 71 | 1 | E1 |
| 8900 | 7651 | 47 | 001 | M | 74 | 1 | E1 |
| 8900 | 7661 | 47 | 001 | M | 13 | 1 | E1 |
| 8900 | 7666 | 47 | 001 | M | 260 | 1 | E1 |
| 8900 | 7703 | 47 | 001 | M | 139 | 1 | E1 |
| 8900 | 7704 | 47 | 001 | M | 208 | 1 | E1 |
| 8900 | 7705 | 47 | 001 | M | 50 | 1 | E1 |
| 8900 | 7707 | 47 | 001 | M | 40 | 1 | E1 |
| 8900 | 7708 | 47 | 001 | M | 304 | 1 | E1 |
| 8900 | 7709 | 47 | 001 | M | 279 | 1 | E1 |
| 8900 | 7716 | 47 | 001 | M | 51 | 1 | E1 |
| 8900 | 7720 | 47 | 001 | M | 223 | 1 | E1 |
| 8900 | 7740 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 7756 | 47 | 001 | M | 17 | 1 | E1 |
| 8900 | 7758 | 47 | 001 | M | 37 | 1 | E1 |
| 8900 | 7811 | 47 | 001 | M | 50 | 1 | E1 |
| 8900 | 7833 | 47 | 001 | M | 48 | 1 | E1 |
| 8900 | 7849 | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 7853 | 47 | 001 | M | 56 | 1 | E1 |
| 8900 | 7859A | 47 | 001 | M | 5 | 1 | E1 |
| 8900 | 7874 | 47 | 001 | M | 223 | 1 | E1 |
| 8900 | 7901 | 47 | 001 | M | 292 | 1 | E1 |
| 8900 | 7903 | 47 | 001 | M | 59 | 1 | E1 |
| 8900 | 7916 | 47 | 001 | M | 58 | 1 | E1 |
| 8900 | 7921 | 47 | 001 | M | 19 | 1 | E1 |
| 8900 | 7924A | 47 | 001 | M | 26 | 1 | E1 |
| 8900 | 7952 | 47 | 001 | M | 24 | 1 | E1 |
| 8900 | 7953 | 47 | 001 | M | 25 | 1 | E1 |
| 8900 | 7967B | 47 | 001 | M | 9 | 1 | E1 |
| 8900 | 7969 | 47 | 001 | M | 22 | 1 | E1 |
| 8900 | 910003 | 47 | 001 | M | 186 | 1 | E1 |
| 8900 | 910004 | 47 | 001 | M | 746 | 1 | E1 |
| 8900 | 910006 | 47 | 001 | M | 746 | 1 | E1 |
| 8900 | 910007 | 47 | 001 | M | 386 | 1 | E1 |
| 8900 | 910009 | 47 | 001 | M | 476 | 1 | E1 |
| 8900 | 910010 | 47 | 001 | M | 476 | 1 | E1 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 910022 | 47 | 001 | M | 14 | 1 | E1 |
| 8900 | 910023 | 47 | 001 | M | 476 | 1 | E1 |
| 8900 | 910024 | 47 | 001 | M | 1161 | 1 | E1 |
| 8900 | 910025 | 47 | 001 | M | 53 | 1 | E1 |
| 8900 | 910027 | 47 | 001 | M | 279 | 1 | E1 |
| 8900 | 1054 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 1552 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 1560 | 47 | 001 | M | 59 | 1 | E3 |
| 8900 | 2523A | 47 | 001 | M | 28 | 1 | E3 |
| 8900 | 2639 | 47 | 001 | M | 52 | 1 | E3 |
| 8900 | 2642 | 47 | 001 | M | 3 | 1 | E3 |
| 8900 | 2653 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 3154 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 3155 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 6554 | 47 | 001 | M | 130 | 1 | E3 |
| 8900 | 6556-ST-9 | 47 | 001 | M | 30 | 1 | E3 |
| 8900 | 7075 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 7514 | 47 | 001 | M | 25 | 1 | E3 |
| 8900 | 7621 | 47 | 001 | M | 74 | 1 | E3 |
| 8900 | 7831 | 47 | 001 | M | 156 | 1 | E3 |
| 8900 | 7848 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 7854 | 47 | 001 | M | 22 | 1 | E3 |
| 8900 | 7859 | 47 | 001 | M | 11 | 1 | E3 |
| 8900 | 7866 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 7924-B | 47 | 001 | M | 26 | 1 | E3 |
| 8900 | 0813 | 47 | 001 | M | 46 | 1 | E3 |
| 8900 | 0814 | 47 | 001 | M | 33 | 1 | E3 |
| 8900 | 0817 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 0818 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 0819 | 47 | 001 | M | 19 | 1 | E3 |
| 8900 | 0822 | 47 | 001 | M | 14 | 1 | E3 |
| 8900 | 0855 | 47 | 001 | M | 223 | 1 | E3 |
| 8900 | 0934 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 0940 | 47 | 001 | M | 33 | 1 | E3 |
| 8900 | 0941 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 0942 | 47 | 001 | M | 14 | 1 | E3 |
| 8900 | 0955 | 47 | 001 | M | 33 | 1 | E3 |
| 8900 | 0957 | 47 | 001 | M | 28 | 1 | E3 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 0964 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 1053A | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 1053B | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 1508 | 47 | 001 | M | 39 | 1 | E3 |
| 8900 | 1561 | 47 | 001 | M | 59 | 1 | E3 |
| 8900 | 1564 | 47 | 001 | M | 62 | 1 | E3 |
| 8900 | 1565 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 2016 | 47 | 001 | M | 219 | 1 | E3 |
| 8900 | 2017 | 47 | 001 | M | 21 | 1 | E3 |
| 8900 | 2019 | 47 | 001 | M | 76 | 1 | E3 |
| 8900 | 2029 | 47 | 001 | M | 114 | 1 | E3 |
| 8900 | 2030 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 2093 | 47 | 001 | M | 22 | 1 | E3 |
| 8900 | 2510 | 47 | 001 | M | 72 | 1 | E3 |
| 8900 | 2528 | 47 | 001 | M | 278 | 1 | E3 |
| 8900 | 2609 | 47 | 001 | M | 7 | 1 | E3 |
| 8900 | 2628 | 47 | 001 | M | 59 | 1 | E3 |
| 8900 | 2640 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 2641 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 2643 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 2644 | 47 | 001 | M | 131 | 1 | E3 |
| 8900 | 2647 | 47 | 001 | M | 201 | 1 | E3 |
| 8900 | 2652A | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 2652B | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 2652C | 47 | 001 | M | 94 | 1 | E3 |
| 8900 | 3010A | 47 | 001 | M | 190 | 1 | E3 |
| 8900 | 3013 | 47 | 001 | M | 51 | 1 | E3 |
| 8900 | 3029 | 47 | 001 | M | 211 | 1 | E3 |
| 8900 | 3030 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 3031 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 3032 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 3033 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 3033A | 47 | 001 | M | 82 | 1 | E3 |
| 8900 | 3034 | 47 | 001 | M | 111 | 1 | E3 |
| 8900 | 3036 | 47 | 001 | M | 135 | 1 | E3 |
| 8900 | 3080 | 47 | 001 | M | 167 | 1 | E3 |
| 8900 | 3082 | 47 | 001 | M | 21 | 1 | E3 |
| 8900 | 3083 | 47 | 001 | M | 6 | 1 | E3 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 3088 | 47 | 001 | M | 12 | 1 | E3 |
| 8900 | 3101 | 47 | 001 | M | 19 | 1 | E3 |
| 8900 | 3107 | 47 | 001 | M | 18 | 1 | E3 |
| 8900 | 3111 | 47 | 001 | M | 11 | 1 | E3 |
| 8900 | 3114 | 47 | 001 | M | 178 | 1 | E3 |
| 8900 | 3115 | 47 | 001 | M | 260 | 1 | E3 |
| 8900 | 3118 | 47 | 001 | M | 84 | 1 | E3 |
| 8900 | 3135 | 47 | 001 | M | 38 | 1 | E3 |
| 8900 | 3136 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 3523 | 47 | 001 | M | 111 | 1 | E3 |
| 8900 | 3531A | 47 | 001 | M | 111 | 1 | E3 |
| 8900 | 3531B | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 3534A | 47 | 001 | M | 30 | 1 | E3 |
| 8900 | 3534B | 47 | 001 | M | 30 | 1 | E3 |
| 8900 | 3541 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 3542 | 47 | 001 | M | 57 | 1 | E3 |
| 8900 | 3543 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 3544 | 47 | 001 | M | 264 | 1 | E3 |
| 8900 | 3544A | 47 | 001 | M | 11 | 1 | E3 |
| 8900 | 3544B | 47 | 001 | M | 33 | 1 | E3 |
| 8900 | 3592 | 47 | 001 | M | 111 | 1 | E3 |
| 8900 | 3594 | 47 | 001 | M | 13 | 1 | E3 |
| 8900 | 3605 | 47 | 001 | M | 35 | 1 | E3 |
| 8900 | 3610 | 47 | 001 | M | 45 | 1 | E3 |
| 8900 | 3618 | 47 | 001 | M | 74 | 1 | E3 |
| 8900 | 4005 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 4557 | 47 | 001 | M | 3 | 1 | E3 |
| 8900 | 4558 | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 5507 | 47 | 001 | M | 219 | 1 | E3 |
| 8900 | 5553 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 6026A | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026B | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026C | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026D | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026E | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026F | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6026G | 47 | 001 | M | 187 | 1 | E3 |
| 8900 | 6556A | 47 | 001 | M | 91 | 1 | E3 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 6556B | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 6556C | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 6556D | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 6556E | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 6556G | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | 6556J | 47 | 001 | M | 30 | 1 | E3 |
| 8900 | 6556K | 47 | 001 | M | 30 | 1 | E3 |
| 8900 | 6556L | 47 | 001 | M | 37 | 1 | E3 |
| 8900 | 6556M | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | 6556Q | 47 | 001 | M | 46 | 1 | E3 |
| 8900 | 6556R | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | 6556S | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 6556T | 47 | 001 | M | 37 | 1 | E3 |
| 8900 | 7006 | 47 | 001 | M | 242 | 1 | E3 |
| 8900 | 7007 | 47 | 001 | M | 253 | 1 | E3 |
| 8900 | 7026 | 47 | 001 | M | 93 | 1 | E3 |
| 8900 | 7035 | 47 | 001 | M | 171 | 1 | E3 |
| 8900 | 7035A | 47 | 001 | M | 84 | 1 | E3 |
| 8900 | 7035B | 47 | 001 | M | 84 | 1 | E3 |
| 8900 | 7035C | 47 | 001 | M | 84 | 1 | E3 |
| 8900 | 7035D | 47 | 001 | M | 19 | 1 | E3 |
| 8900 | 7043 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 7053 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 7057 | 47 | 001 | M | 49 | 1 | E3 |
| 8900 | 7058 | 47 | 001 | M | 95 | 1 | E3 |
| 8900 | 7060 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 7062 | 47 | 001 | M | 19 | 1 | E3 |
| 8900 | 7067A | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | 7069 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 7072 | 47 | 001 | M | 3 | 1 | E3 |
| 8900 | 7074 | 47 | 001 | M | 1 | 1 | E3 |
| 8900 | 7077A | 47 | 001 | M | 27 | 1 | E3 |
| 8900 | 7078A | 47 | 001 | M | 182 | 1 | E3 |
| 8900 | 7078B | 47 | 001 | M | 182 | 1 | E3 |
| 8900 | 7078C | 47 | 001 | M | 182 | 1 | E3 |
| 8900 | 7078D | 47 | 001 | M | 182 | 1 | E3 |
| 8900 | 7078E | 47 | 001 | M | 182 | 1 | E3 |
| 8900 | 7078F | 47 | 001 | M | 182 | 1 | E3 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 7083 | 47 | 001 | M | 27 | 1 | E3 |
| 8900 | 7505 | 47 | 001 | M | 274 | 1 | E3 |
| 8900 | 7554A | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7666A | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7712 | 47 | 001 | M | 104 | 1 | E3 |
| 8900 | 7751 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 7752 | 47 | 001 | M | 7 | 1 | E3 |
| 8900 | 7802C | 47 | 001 | M | 16 | 1 | E3 |
| 8900 | 7802D | 47 | 001 | M | 14 | 1 | E3 |
| 8900 | 7802F | 47 | 001 | M | 46 | 1 | E3 |
| 8900 | 7803 | 47 | 001 | M | 18 | 1 | E3 |
| 8900 | 7819 | 47 | 001 | M | 204 | 1 | E3 |
| 8900 | 7824A | 47 | 001 | M | 28 | 1 | E3 |
| 8900 | 7841A | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7847 | 47 | 001 | M | 9 | 1 | E3 |
| 8900 | 7857 | 47 | 001 | M | 139 | 1 | E3 |
| 8900 | 7859B | 47 | 001 | M | 5 | 1 | E3 |
| 8900 | 7863 | 47 | 001 | M | 255 | 1 | E3 |
| 8900 | 7875 | 47 | 001 | M | 45 | 1 | E3 |
| 8900 | 7876 | 47 | 001 | M | 22 | 1 | E3 |
| 8900 | 7881 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 7912 | 47 | 001 | M | 168 | 1 | E3 |
| 8900 | 7914 | 47 | 001 | M | 220 | 1 | E3 |
| 8900 | 7914A | 47 | 001 | M | 84 | 1 | E3 |
| 8900 | 7915 | 47 | 001 | M | 220 | 1 | E3 |
| 8900 | 7919 | 47 | 001 | M | 24 | 1 | E3 |
| 8900 | 7922 | 47 | 001 | M | 121 | 1 | E3 |
| 8900 | 7933 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 7935 | 47 | 001 | M | 232 | 1 | E3 |
| 8900 | 7953A | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7953B | 47 | 001 | M | 62 | 1 | E3 |
| 8900 | 7953C | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7955 | 47 | 001 | M | 4 | 1 | E3 |
| 8900 | 7957 | 47 | 001 | M | 56 | 1 | E3 |
| 8900 | 7958 | 47 | 001 | M | 6 | 1 | E3 |
| 8900 | 7964A | 47 | 001 | M | 201 | 1 | E3 |
| 8900 | 7964B | 47 | 001 | M | 201 | 1 | E3 |
| 8900 | 7964C | 47 | 001 | M | 201 | 1 | E3 |

# ORNL EXEMPT BUILDINGS, SORTED BY EXEMPTION CRITERIA

| AGENCY CODE | UNIQUE IDENTIFIER | STATE CODE | COUNTY CODE | SEISMICITY | AREA, $m^2$ | NUMBER OF BUILDINGS | EXEMPTION CRITERIA |
|---|---|---|---|---|---|---|---|
| 8900 | 7964D | 47 | 001 | M | 67 | 1 | E3 |
| 8900 | 7964E | 47 | 001 | M | 134 | 1 | E3 |
| 8900 | 7964F | 47 | 001 | M | 134 | 1 | E3 |
| 8900 | 7964G | 47 | 001 | M | 134 | 1 | E3 |
| 8900 | 7965A | 47 | 001 | M | 156 | 1 | E3 |
| 8900 | 7965B | 47 | 001 | M | 156 | 1 | E3 |
| 8900 | 7965C | 47 | 001 | M | 156 | 1 | E3 |
| 8900 | 7968 | 47 | 001 | M | 19 | 1 | E3 |
| 8900 | X176230 | 47 | 001 | M | 31 | 1 | E3 |
| 8900 | X185248 | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | X185249 | 47 | 001 | M | 15 | 1 | E3 |
| 8900 | X186600 | 47 | 001 | M | 93 | 1 | E3 |
| 8900 | X186689 | 47 | 001 | M | 93 | 1 | E3 |
| 8900 | 1062 | 47 | 001 | M | 641 | 1 | E5 |
| 8900 | 1059 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 1061 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 1507 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 1509 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 2101 | 47 | 001 | M | 327 | 1 | E7 |
| 8900 | 2568 | 47 | 001 | M | 201 | 1 | E7 |
| 8900 | 2660 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 2661 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 3156 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 4007 | 47 | 001 | M | 892 | 1 | E7 |
| 8900 | 5002 | 47 | 001 | M | 641 | 1 | E7 |
| 8900 | 6012 | 47 | 001 | M | 836 | 1 | E7 |
| 8900 | 7856 | 47 | 001 | M | 1124 | 1 | E7 |
| 8900 | 7918 | 47 | 001 | M | 641 | 1 | E7 |

# APPENDIX D

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *2008* | *2013* | *2018* | *2069* | *2506* | *2517* | *3026C* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 451 | 1067 | 591 | 652 | 815 | 441 | 2247 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 50 | 50 | 29 | 50 | 10 | 70 |
| ESSENTIAL DESIGNATION | P2 | P1 | P1 | P1 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1946 | 1943 | 1943 | 1943 | 1943 | 1943 | 1943 |
| MODEL BUILDING TYPE | MB02 | MB02 | MB02 | MB02 | MB02 | MB02 | MB02 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3026D* | *3074* | *3550* | *6003* | *0907* | *1503* | *2000* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 2247 | 293 | 1145 | 681 | 375 | 890 | 2107 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 50 | 70 | 10 | 70 | 70 | 50 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P1 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1945 | 1951 | 1943 | 1976 | 1948 | 1965 | 1948 |
| MODEL BUILDING TYPE | MB02 | MB02 | MB02 | MB02 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N01 | N01 | N02 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | 2001 | 2011 | 2024 | 2033 | 2523 | 2621 | 3003 |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 2403 | 539 | 957 | 1858 | 334 | 508 | 707 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 10 | 70 | 50 | 50 | 60 | 10 | 70 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P1 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1948 | 1943 | 1969 | 1994 | 1955 | 1961 | 1943 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N02 | N02 | N03 | N01 | N01 | N02 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | 3044 | 3047 | 3095 | 3104 | 3144 | 3147 | 3150 |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 284 | 2381 | 651 | 681 | 650 | 1003 | 1087 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 70 | 50 | 50 | 70 | 10 | 70 |
| ESSENTIAL DESIGNATION | P1 | P3 | P1 | P1 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1955 | 1963 | 1959 | 1961 | 1987 | 1988 | 1995 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N03 | N01 | N01 | N01 | N02 | N02 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3508* | *3525* | *3587* | *3608* | *5510* | *5510A* | *6011* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 1296 | 2466 | 316 | 1821 | 585 | 684 | 859 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 70 | 50 | 50 | 70 | 70 | 10 |
| ESSENTIAL DESIGNATION | P2 | P3 | P1 | P1 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1951 | 1963 | 1950 | 1989 | 1989 | 1991 | 1989 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N02 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7001* | *7002* | *7003* | *7005* | *7009* | *7018* | *7039* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 4113 | 2626 | 462 | 414 | 333 | 1858 | 929 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 60 | 50 | 50 | 50 | 50 | 50 | 50 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P1 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1948 | 1948 | 1948 | 1948 | 1948 | 1959 | 1986 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | 7516 | 7555 | 7652 | 7653 | 7654 | 7823 | 7831A |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 374 | 445 | 223 | 279 | 149 | 372 | 107 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 50 | 40 | 40 | 40 | 40 | 40 |
| ESSENTIAL DESIGNATION | P1 | P2 | P3 | P3 | P3 | P3 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1967 | 1961 | 1987 | 1987 | 1988 | 1972 | 1978 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 | MB03 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7878* | *7879* | *7936* | *7962* | *7966* | *3001* | *3005* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 331 | 383 | 372 | 519 | 465 | 2763 | 1056 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 50 | 40 | 10 | 50 | 80 | 70 |
| ESSENTIAL DESIGNATION | P2 | P2 | P1 | P1 | P3 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H1 | H2 |
| DATE OF CONSTRUCTION | 1987 | 1991 | 1993 | 1988 | 1977 | 1943 | 1948 |
| MODEL BUILDING TYPE | MB03 | MB03 | MB03 | MB03 | MB03 | MB04 | MB04 |
| NUMBER OF STORIES | N01 | N01 | N01 | N02 | N01 | N03 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3010* | *3012* | *3028* | *3042* | *3137* | *3502* | *3503* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 792 | 1003 | 1584 | 3472 | 595 | 1127 | 1134 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 50 | 70 | 70 | 70 | 50 | 70 |
| ESSENTIAL DESIGNATION | P3 | P1 | P1 | P2 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1950 | 1947 | 1951 | 1955 | 1984 | 1950 | 1948 |
| MODEL BUILDING TYPE | MB04 | MB04 | MB04 | MB04 | MB04 | MB04 | MB04 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N02 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3504* | *3505* | *3517* | *4509* | *5500A* | *7012* | *7500* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 680 | 609 | 1552 | 736 | 743 | 2496 | 1364 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 50 | 70 | 50 | 10 | 50 | 70 |
| ESSENTIAL DESIGNATION | P1 | P1 | P3 | P1 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1951 | 1951 | 1958 | 1968 | 1968 | 1953 | 1952 |
| MODEL BUILDING TYPE | MB04 | MB04 | MB04 | MB04 | MB04 | MB04 | MB04 |
| NUMBER OF STORIES | N02 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7503* | *7506* | *7602* | *7603* | *7824* | *7930* | *7572* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 1579 | 532 | 1472 | 3832 | 465 | 3617 | 650 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 50 | 70 | 70 | 50 | 70 | 40 |
| ESSENTIAL DESIGNATION | P3 | P1 | P1 | P1 | P2 | P2 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1951 | 1955 | 1965 | 1965 | 1975 | 1968 | 1996 |
| MODEL BUILDING TYPE | MB04 | MB04 | MB04 | MB04 | MB04 | MB04 | MB05 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | 7574 | 7668 | 7842 | 7960 | 2547 | 7077 | 7507 |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 372 | 338 | 595 | 149 | 876 | 401 | 136 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 40 | 40 | 40 | 40 | 50 | 50 | 60 |
| ESSENTIAL DESIGNATION | P3 | P3 | P2 | P3 | P1 | P1 | P3 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1992 | 1989 | 1983 | 1988 | 1987 | 1990 | 1961 |
| MODEL BUILDING TYPE | MB05 | MB05 | MB05 | MB05 | MB05 | MB05 | MB05 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7507W* | *7877* | *7917* | *7934* | *3025E* | *3025W* | *4505* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 209 | 32 | 738 | 232 | 5489 | 5489 | 7289 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 40 | 40 | 10 | 40 | 70 | 70 | 70 |
| ESSENTIAL DESIGNATION | P2 | P2 | P1 | P2 | P2 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1993 | 1987 | 1990 | 1984 | 1950 | 1950 | 1951 |
| MODEL BUILDING TYPE | MB05 | MB05 | MB05 | MB05 | MB07 | MB07 | MB07 |
| NUMBER OF STORIES | N01 | N01 | N02 | N01 | N03 | N03 | N03 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *4507* | *2010* | *2026* | *3500* | *4501* | *4508* | *4515* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 354 | 1093 | 2583 | 7385 | 3367 | 9200 | 5992 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 60 | 70 | 70 | 70 | 70 | 70 |
| ESSENTIAL DESIGNATION | P1 | P1 | P2 | P1 | P2 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1957 | 1951 | 1964 | 1951 | 1951 | 1962 | 1987 |
| MODEL BUILDING TYPE | MB07 | MB08 | MB08 | MB08 | MB08 | MB08 | MB08 |
| NUMBER OF STORIES | N01 | N01 | N02 | N02 | N02 | N02 | N02 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3130* | *2649* | *3002* | *3027* | *7702* | *7860* | *7883* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 381 | 698 | 321 | 357 | 1186 | 383 | 426 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 70 | 50 | 40 | 50 | 70 | 40 |
| ESSENTIAL DESIGNATION | P1 | P2 | P2 | P3 | P1 | P1 | P3 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1983 | 1996 | 1948 | 1955 | 1954 | 1980 | 1989 |
| MODEL BUILDING TYPE | MB09 | MB09 | MB09 | MB09 | MB09 | MB09 | MB09 |
| NUMBER OF STORIES | N02 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7900* | *1505* | *2099* | *2519* | *3546* | *3606* | *5505* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 5738 | 9098 | 44 | 2194 | 680 | 697 | 2160 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 70 | 50 | 50 | 10 | 10 | 70 |
| ESSENTIAL DESIGNATION | P3 | P1 | P2 | P1 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1965 | 1978 | 1993 | 1948 | 1976 | 1985 | 1968 |
| MODEL BUILDING TYPE | MB09 | MB10 | MB10 | MB10 | MB10 | MB10 | MB10 |
| NUMBER OF STORIES | N01 | N03 | N01 | N04 | N01 | N02 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *6000* | *7601* | *2007* | *2531* | *2638* | *3017* | *4512* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 10201 | 1799 | 811 | 836 | 59 | 952 | 455 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 10 | 70 | 50 | 50 | 10 | 29 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P3 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1961 | 1965 | 1951 | 1954 | 1978 | 1952 | 1987 |
| MODEL BUILDING TYPE | MB10 | MB10 | MB13 | MB13 | MB13 | MB13 | MB13 |
| NUMBER OF STORIES | N01 | N02 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7509* | *7606A* | *7606B* | *7611* | *7710* | *7735* | *7826* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 352 | 495 | 783 | 6 | 239 | 260 | 139 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 10 | 50 | 50 | 29 | 50 | 70 | 40 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P1 | P1 | P1 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1964 | 1962 | 1962 | 1965 | 1962 | 1988 | 1976 |
| MODEL BUILDING TYPE | MB13 | MB13 | MB13 | MB13 | MB13 | MB13 | MB13 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7910* | *7932* | *2500* | *2518* | *2525* | *6007* | *6008* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 1230 | 14 | 804 | 941 | 2566 | 362 | 557 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 10 | 50 | 60 | 10 | 50 | 10 | 70 |
| ESSENTIAL DESIGNATION | P1 | P2 | P1 | P1 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1965 | 1968 | 1967 | 1951 | 1957 | 1983 | 1984 |
| MODEL BUILDING TYPE | MB13 | MB13 | MB14 | MB14 | MB14 | MB14 | MB14 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *7015* | *7067* | *7855* | *7569* | *1504* | *2537* | *3009* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 199 | 70 | 269 | 7 | 1015 | 28 | 17 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 23 | 40 | 40 | 70 | 50 | 50 |
| ESSENTIAL DESIGNATION | P1 | P1 | P2 | P3 | P1 | P3 | P2 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1960 | 1965 | 1988 | 1983 | 1972 | 1978 | 1950 |
| MODEL BUILDING TYPE | MB14 | MB14 | MB14 | MB15 | MB15 | MB15 | MB15 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *3019A* | *3019B* | *3037* | *3038* | *3105* | *5000* | *5506* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 3096 | 3096 | 760 | 701 | 53 | 4828 | 52 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 70 | 10 | 70 | 50 | 70 | 29 |
| ESSENTIAL DESIGNATION | P1 | P3 | P1 | P3 | P1 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1944 | 1954 | 1951 | 1951 | 1962 | 1952 | 1963 |
| MODEL BUILDING TYPE | MB15 | MB15 | MB15 | MB15 | MB15 | MB15 | MB15 |
| NUMBER OF STORIES | N02 | N02 | N02 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|---|---|---|
| UNIQUE IDENTIFIER | *6000B* | *6025* | *7830* | *7834* | *7567* | *7852* | *7920* |
| STATE CODE | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M | M | M | M |
| AREA, $m^2$ | 474 | 1617 | 56 | 212 | 22 | 14 | 3086 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 70 | 10 | 40 | 40 | 50 | 50 | 70 |
| ESSENTIAL DESIGNATION | P1 | P1 | P1 | P2 | P3 | P2 | P3 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1995 | 1967 | 1980 | 1980 | 1962 | 1964 | 1966 |
| MODEL BUILDING TYPE | MB15 | MB15 | MB15 | MB15 | MB15 | MB15 | MB15 |
| NUMBER OF STORIES | N01 | N01 | N01 | N01 | N01 | N01 | N01 |
| EHR DESIGNATION | | | | | | | |
| EVALUATION PROCEDURE USED | | | | | | | |
| SOIL TYPE | | | | | | | |
| FOUNDATION TYPE | | | | | | | |
| OUTCOME OF EVALUATON | | | | | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | | | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | | | | | |
| ADJACENCY PROBLEM DETERMINATION | | | | | | | |
| STRUCTURAL COSTS | | | | | | | |
| NONSTRUCTURAL COSTS | | | | | | | |
| FINISHING COSTS | | | | | | | |
| PROJECT COSTS | | | | | | | |
| SOURCE OF COST ESTIMATE | | | | | | | |
| COMMENTS | | | | | | | |

# ORNL NON-EXEMPT, NON-EVALUATED BUILDINGS, SORTED BY MODEL BUILDING TYPE AND BUILDING NUMBER

| | | | |
|---|---|---|---|
| AGENCY CODE | 8900 | 8900 | 8900 |
| UNIQUE IDENTIFIER | *7931* | *5500* | *6010* |
| STATE CODE | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 |
| SEISMICITY | M | M | M |
| AREA, $m^2$ | 19 | 4828 | 3883 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 |
| OCCUPANCY CLASS | 50 | 70 | 70 |
| ESSENTIAL DESIGNATION | P2 | P1 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1968 | 1952 | 1969 |
| MODEL BUILDING TYPE | MB15 | MB16 | MB16 |
| NUMBER OF STORIES | N01 | N02 | N02 |
| EHR DESIGNATION | | | |
| EVALUATION PROCEDURE USED | | | |
| SOIL TYPE | | | |
| FOUNDATION TYPE | | | |
| OUTCOME OF EVALUATON | | | |
| STRUCTURAL DEFCIENCY DETERMINATION | | | |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | | | |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | | | |
| ADJACENCY PROBLEM DETERMINATION | | | |
| STRUCTURAL COSTS | | | |
| NONSTRUCTURAL COSTS | | | |
| FINISHING COSTS | | | |
| PROJECT COSTS | | | |
| SOURCE OF COST ESTIMATE | | | |
| COMMENTS | | Two Building Systems | Two Building Systems |

# APPENDIX E

# ORNL EVALUATED, NON-EXEMPT BUILDINGS

# ORNL EVALUATED, NON-EXEMPT BUILDINGS

| AGENCY CODE | 8900 | 8900 | 8900 | 8900 |
|---|---|---|---|---|
| UNIQUE IDENTIFIER | *1000* | *4500N* | *4500S* | *1506* |
| STATE CODE | 47 | 47 | 47 | 47 |
| COUNTY CODE | 001 | 001 | 001 | 001 |
| SEISMICITY | M | M | M | M |
| AREA, $m^2$ | 5528 | 31702 | 25497 | 1623 |
| NUMBER OF BUILDINGS | 1 | 1 | 1 | 1 |
| EXEMPTION CRITERIA | E0 | E0 | E0 | E0 |
| OCCUPANCY CLASS | 10 | 10 | 10 | 70 |
| ESSENTIAL DESIGNATION | P1 | P2 | P2 | P1 |
| HISTORIC DESIGNATION | H2 | H2 | H2 | H2 |
| DATE OF CONSTRUCTION | 1946 | 1952 | 1962 | 1978 |
| MODEL BUILDING TYPE | MB02 | MB08 | MB08 | MB11 |
| NUMBER OF STORIES | N02 | N02 | N03 | N01 |
| EHR DESIGNATION | R2 | R1 | R1 | R2 |
| EVALUATION PROCEDURE USED | P1 | P1 | P1 | P1 |
| SOIL TYPE | S3 | S3 | S3 | S3 |
| FOUNDATION TYPE | FT1 | FT1 | FT1 | FT1 |
| OUTCOME OF EVALUATON | NG | NG | NG | NG |
| STRUCTURAL DEFCIENCY DETERMINATION | FS | FS | FS | FS |
| NONSTRUCTURAL DEFCIENCY DETERMINATION | FN | FN | FN | FN |
| GEOLOGIC/SITE HAZARD DEFICIENCY DETERMINATION | PG | PG | PG | PG |
| ADJACENCY PROBLEM DETERMINATION | PA | PA | PA | PA |
| STRUCTURAL COSTS | $619600 | $7597400 | $6110400 | $173500 |
| NONSTRUCTURAL COSTS | $101300 | $774500 | $62900 | $29700 |
| FINISHING COSTS | $101300 | $774500 | $62900 | $29700 |
| PROJECT COSTS | $246700 | $2743900 | $2206900 | $69900 |
| SOURCE OF COST ESTIMATE | C3 | C3 | C3 | C3 |
| COMMENTS | | | | DNR |

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