

DEMOLITION OF BUILDING 51 AND THE BEVATRON

Final Environmental Impact Report

Prepared for
Lawrence Berkeley National Laboratory

July 2007

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436 14th Street
Suite 600
Oakland, CA 94612
510.839.5066
www.esassoc.com

Los Angeles

Petaluma

Portland

Sacramento

San Diego

San Francisco

Seattle

Tampa

Woodland Hills

204442



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CHAPTER I

Introduction

A. CEQA Process

On October 21, 2005, the University of California, the Lead Agency under the California Environmental Quality Act (CEQA), circulated for public review a Draft Environmental Impact Report (Draft EIR or DEIR) on the proposed Lawrence Berkeley National Laboratory (LBNL, Berkeley Lab, or the Laboratory) Building 51 and Bevatron Demolition project. The 47-day public review and comment period on the Draft EIR began on October 21, 2005, and closed on December 7, 2005. LBNL held a public hearing on the Draft EIR on November 16, 2005.

The Final EIR is an informational document prepared by the Lead Agency that must be considered by decision makers before approving or denying the proposed project. California Environmental Quality Act Guidelines Section 15132 specifies the following:

The Final EIR shall consist of:

- (a) The Draft EIR or a revision of the draft.
- (b) Comments and recommendations received on the Draft EIR either verbatim or in summary.
- (c) A list of persons, organizations, and public agencies commenting on the Draft EIR.
- (d) The response of the Lead Agency to significant environmental points raised in review and consultation process.
- (e) Any other information added by the Lead Agency.

This document has been prepared pursuant to the CEQA Guidelines. This Final EIR incorporates comments from public agencies and the general public, and contains appropriate responses by the Lead Agency to those comments.

B. Method of Organization

Following this introduction (Chapter I), Chapter II of this Final EIR illustrates textual changes, some of which were made in response to comments on the Draft EIR.

Chapter III contains a list of persons that testified at the November 16, 2005 public hearing, a list of persons, agencies, and organizations that submitted written comments on the Draft EIR, a transcript of the public hearing, and reproductions of the written comments. Each comment is labeled with a number in the margin.

Chapter IV contains responses by the University to the public and agency comments.

Chapter V contains the Mitigation Monitoring and Reporting Program for the project.

A new EIR Appendix E contains a Technical Memorandum dated July 3, 2007. The Technical Memorandum analyzes one project variant that would alter the sequence of the demolition activities and one project variant that would reduce the minimum duration of the project from four years to three and one-half years.

CHAPTER II

Revisions to the Draft EIR

The following corrections and changes are made to the Draft EIR and are hereby incorporated as part of the Final EIR. Revised or new language is underlined. Deleted language is indicated by ~~strikethrough~~ text.

Pages II-1 – 2 and III-8:

The duration of the physical work for the project may vary from four to seven years, from early ~~2006~~ 2008 through ~~2009 or~~ 2011 or beyond, contingent upon funding and results of material sampling. For the purposes of conservative impact assessment, where impacts presumably are intensified in a shorter project timeframe, the project is assumed to take place over a four year period. [Footnote added:]

A variant of the project could reduce the minimum duration of the project from four years to three and a half years, but this reduction in schedule would have no resulting effect on project impacts, including traffic impacts. See revised Page IV.K-10 and Appendix E.

Pages II-2 and III-3:

Depending upon funding, a project variant, under which project activities would be conducted in an alternative sequence, has been developed since publication of the DEIR. The alternative-sequence project variant would begin with appropriate sampling and surveys for hazardous building construction materials and debris, followed by removal and abatement of all hazardous materials within Building 51. Prior to demolition of the building structures, systems and components, the project would set up additional stormwater drainage and collection systems. Once the building was demolished down to the grade level concrete slab, the Bevatron shielding blocks and equipment would be dismantled and removed with the use of two modern mobile cranes. Finally, the project would demolish and remove the building foundations, tunnels, trenches and slabs and backfill with suitable clean fill material. As documented in Appendix E, a Technical Memorandum dated July 3, 2007, this alternative-sequence variant, if implemented, would not create a new significant impact, nor would it substantially increase the severity of a significant impact associated with the Project or would it require new or altered mitigation measures.

Page II-4:

Under this alternative, most of the concrete from the building structure (i.e., walls and floors), foundation, and many of the concrete blocks shielding the Bevatron would be rumbled on-site. Metal (e.g., rebar) in the debris would be separated and disposed of

separately. Only concrete containing no detectable added (i.e., non-naturally occurring) radioactivity and otherwise clear of contaminants would be rubble. The rubble material and segregated reinforcing steel would be recycled if public or private sector demand was available at the time of production. If not, it would be disposed of at a landfill. LBNL could use the rubble as aggregate or fill material if the need for such materials coincided with its production, although this is speculative at the present time.

This alternative would not eliminate the significant unavoidable impact to cultural resources, and would not reduce any significant impacts to less than significant. ~~This alternative would in effect trade off increased air quality and noise effects on site against decreases in truck traffic off site. Since none of these impacts are significant, the alternative~~

Page IV.B-2:

The central issue of concern with DPM is the risk of chronic health effects associated with long-term exposure to these particulates. To address this risk, CARB developed a risk management guidance document and risk reduction plan to reduce DPM and resultant health risk by 75 percent in 2010 and 85 percent by 2020. Since approval of these documents in September 2000, CARB has adopted a series of rules for stationary and portable diesel engines, solid waste collection vehicles, transport refrigeration units, and idling of diesel vehicles. Additional measures and specific regulations to reduce DPM emissions will be evaluated and developed over the next several years. In addition, in May 2004, the U.S. Environmental Protection Agency (EPA) adopted a comprehensive national program known as the Clean Air Nonroad Diesel Rule to reduce emissions from future nonroad diesel engines by more than 90 percent by integrating engine and fuel controls (EPA, 2004). Standards for new engines will be phased in beginning in 2008. Likewise, the new rule will cut the sulfur content of diesel fuel from the current 3,000 parts per million (ppm) to 500 ppm in 2007 and 15 ppm by 2010. As part of the Clean Air Nonroad Diesel Rule, EPA introduced sulfur content requirements for highway diesel fuel. The highway vehicle diesel fuel sulfur limit, which was originally 5,000 parts per million (ppm), was first revised to a limit of 500 ppm (low sulfur fuel), and then further reduced to 15 ppm (ultra-low sulfur fuel), beginning, for retail and wholesale consumers, on October 15, 2006. The 15 ppm sulfur limit is required to prevent the malfunction of catalyzed filtration systems that are needed to meet the meet future diesel engine emission standards. These federal limits on sulfur in fuel apply only to fuel for highway vehicles. CARB regulations mandate the same sulfur content for highway diesel fuel as do the EPA regulations, except that the effective date for retail and wholesale consumers was September 1, 2006.

Nonroad vehicle federal restrictions on sulfur content in diesel fuel follow a different schedule. The 2004 EPA Nonroad Diesel rule limits the sulfur in nonroad fuels to 500 ppm effective June 1, 2007, and 15 ppm effective June 1, 2010. Subsequent to these federal restrictions for nonroad engines, CARB moved up the dates for compliance with sulfur restrictions and on December 14, 2004, required that nonroad diesel fuel sold in California, except for diesel fuel used for locomotives or marine engines, must meet the same sulfur restrictions as fuel used for highway vehicles. In this case, the sulfur content in fuel for

nonroad engines in California must not exceed 15 ppm as of September 1, 2006, rather than the EPA date of June 2010.

Page IV.B-11:

As described in Chapter III, Project Description, the Bevatron apparatus would be disassembled and Building 51 and the foundation slabs and tunnels underneath the building would be demolished. All work related to disassembly and removal of the internal structures (i.e., the concrete shielding blocks and the Bevatron machine) would occur while the exterior building structure is in place, minimizing the release of dust and other emissions. Subsequently, this external building would be demolished. [Footnote added:]

A potential alternative-sequence project variant that would demolish the structure of Building 51 before disassembly and removal of the Bevatron is analyzed and addressed in Appendix E.

After demolition of the building, the slab and foundation structure would be demolished. Later demolition steps would include the possible excavation of approximately 200 cubic yards of contaminated soils and backfill of the site with an estimated 20,000 cubic yards of clean fill.

Page IV.B-13:

Even accounting for the source reductions, the exposure of the public to DPM emissions from haul trucks would be greater than the exposure to DPM emissions from on-site demolition equipment, primarily because the haul trucks would pass within approximately 30 feet of some residences in Berkeley, while the Building 51 work site, where the demolition equipment would operate, is 1,100 feet or more from the nearest residences. This very large difference in distances is sufficient to determine that the concentrations of project DPM in exhaust emissions that would reach any residence would be much less for on-site equipment than for haul trucks. [Footnote added:]

Although the project's on-site demolition equipment would be additional sources of DPM, the DPM that would reach off-site residences would be reduced by dispersion, due to the distance of the project site from these residences. As a net result, DPM concentrations from on-site equipment would be roughly 1/100 to 1/10 of the annual DPM concentrations from hauling.

Page IV.B-15:

Impact IV.B-2: The proposed project could potentially result in a cumulatively considerable contribution to regional air quality impacts. (Less than Significant)

[Note: The text following Impact IV.B-2 has been replaced with the following new text. These revisions are hereby incorporated in the Final EIR]

The project would generate air emissions only from temporary demolition-related activity and traffic. When completed, there would be no operating emissions.

Following BAAQMD impact significance guidance, because the project-level air quality impacts would be less than significant, the cumulative air quality effect for criteria pollutants can be based on a determination of the consistency of this project with the LRDP and the consistency of the LRDP with the regional CAP. Because the proposed project is consistent with the LRDP and, in turn, because the LRDP has been determined to be consistent with the CAP, the project's contribution of criteria pollutant emissions to cumulative regional air quality would not be considered to be cumulatively considerable. Therefore, the cumulative impact to criteria pollutants would be less than significant.

For Toxic Air Contaminants, including diesel particulate matter (DPM), the project-specific incremental cancer risk for a resident living along truck haul routes was conservatively estimated at approximately 0.01 in a million, or about 1/1000th of the health risk significance criterion value of 10 in a million, so the project-specific impact was found to be less than significant. The proposed project is part of the LRDP, for which the 1987 LRDP EIR, as amended, determined that the overall project-specific impact due to TAC emissions would be less than significant¹. However, that EIR did identify a significant and unavoidable cumulative impact due to anticipated increases in toxic air contaminant (TAC) emissions in the region. The 1987 LRDP EIR, as amended, stated that no precise methodology existed for estimating cumulative TAC risk and that a conclusion regarding cumulative TAC impacts could be deemed speculative, but ultimately concluded that the cumulative impact would be significant because controls on regional increases in TAC emissions would not be within the jurisdiction of LBNL (LBNL, 1992). Although the EIR judged the cumulative impact of the 1987 LRDP to be significant, the contribution of the project to the impact of the overall LRDP would be small and its contribution to the regional TAC levels would not be considerable, for the following reasons.

First, the project is a single element of the overall 1987 LRDP. Each construction project under the LRDP involves temporary construction-related activity and traffic; on a per-square-foot of building basis, DPM emissions from construction-related activity and traffic are similar to DPM emissions from project demolition-related activity and traffic, because similar types of trucks and equipment are involved and similar quantities of materials must be moved. On that per-square-foot of building basis alone, DPM emissions from the project represent a small fraction of DPM emissions under the LRDP, because the project represents a small fraction of construction under the LRDP. Furthermore, normal long-term operations of a number of on-going activities under the LRDP result in other DPM emissions from truck traffic and maintenance operation of diesel generators, as well as other TAC emissions from laboratory and other operations². As noted above, the potential

¹ As noted in the setting, CARB identified DPM as a toxic air contaminant in 1998, following the most recent update of the 1987 LRDP EIR, as amended, which is the *Supplemental Environmental Impact Report Addendum* that was published in 1997. Therefore, the 1987 LRDP EIR, as amended, analyzed toxic air contaminants in general, but did not include DPM in that analysis.

² Subsequent to publication of the project DEIR, Berkeley Lab published the Draft EIR for the proposed 2006 LRDP (LBNL, 2007). That Draft EIR, like the 1987 LRDP EIR, as amended, identified a significant unavoidable cumulative impact due to TAC emissions. Consistent with the above, the Draft EIR for the 2006 LRDP found that the great majority of the cancer risk from project TACs was due to DPM.

hazard from TACs other than DPM would be smaller than the potential hazard from the DPM generated by diesel construction equipment, generators and trucks, but these other DPM contributions further diminish the relative contribution of the project to the total TAC and DPM emissions under the LRDP. Therefore, the DPM emissions from the project represent a small fraction of total DPM emissions under the 1987 LRDP.

Second, with respect to controlling the TAC levels in ambient air, gasoline formulations were changed in the 1990s to reduce ambient concentrations of TACs, such as benzene. Even after the resulting substantial reductions of risk from TACs in the Bay Area, CARB estimated the cancer risk from all TACs in the Bay Area at 659 in one million as of 2000; 73 percent of this risk (480 in one million) was attributed to DPM (CARB, 2006).³ Because the project's risk is almost entirely due to DPM and because DPM is the majority component of risk in the Bay Area air, for this project it is sufficient to consider DPM alone in determining the project's cumulative impact from TACs. As stated in the setting, the CARB's Diesel Risk Reduction Plan calls for a 75-percent reduction in truck DPM emissions by 2010 and an 85-percent reduction by 2020 (from the base year 2000 level) by fuel sulfur reductions and engine emission control devices. Furthermore, these control strategies and the resulting on-going reductions in risk from TACs in the Bay Area directly address the caution and concern stated in the 1987 LRDP EIR, as amended, for potential increases in toxic air contaminant (TAC) concentrations within the Bay Area region. Given that these anticipated increases in TAC concentrations have not occurred and have instead become material reductions in TAC concentrations, the concern for the cumulative contribution of the LRDP to increasing regional TAC concentrations is not warranted. Although the controls on regional increases in TAC emissions remain outside of the jurisdiction of LBNL, the scheduled reductions due to these continuing control strategies will be reflected in emissions from the project and in LRDP-related DPM emissions from trucks.

Finally, in summary, DPM emissions from the project represent a small fraction of DPM emissions under the LRDP and a less than significant project-specific impact; DPM emissions under the LRDP represent an extremely small fractional contribution to decreasing regional DPM emissions and a less than significant project-specific impact. Given the anticipated substantial future reductions in overall truck DPM emissions and the resulting decrease in cancer risk in the Bay Area, and given the project's minimal contribution to existing and future cancer risk, it is concluded that the project contribution to cumulative effects from TAC emissions is not considerable, and therefore is less than significant.

Please refer to the cumulative impacts discussion in Section IV.A, Aesthetics, for a detailed discussion of the reasons why the cumulative effects of a potential future project of unknown purpose and size at the Building 51 site are expected to be less than significant.

³ To understand the magnitude of the cumulative effect, consider that the 480-in-one-million regional cancer risk from DPM affects every resident in the Bay Area. By comparison, the project DPM would increase the risk to certain residents close to the roadway by 0.01-in-one-million, at most. That risk would be highly localized, would diminish rapidly with distance from the roadway, and would end when the project is completed.

Regarding air quality impacts in particular, the current 1987 LRDP is consistent with the CAP, and the new 2006 LRDP in preparation is expected to be consistent with the CAP. In combination with the other factors listed earlier, including an expectation that project-level air quality impacts would be less than significant, a future project at the Building 51 site would not be expected to contribute considerably to a cumulatively significant air quality impact.

Mitigation: None additional required.

Page IV.B-16:

California Air Resources Board (CARB), *California Almanac of Emissions and Air Quality - 2006 Edition*, Table 5-43 and Figure 5-11. Available on the internet at: <http://www.arb.ca.gov/aqd/almanac/almanac06/pdf/chap506.pdf>. Viewed February 10, 2007.

Lawrence Berkeley National Laboratory, *Draft Supplemental Environmental Impact Report* (1992 SEIR); Page III-J-46, April 1992.

Lawrence Berkeley National Laboratory, *Long-Range Development Plan Draft Environmental Impact Report* (2006 LRDP); Page IV.B-48. Available on the internet at: <http://www.lbl.gov/Community/LRDP/index.html>. January 22, 2007.

Page IV.C-5 (footnote 4):

Alameda whipsnake (*Masticophis lateralis euryxanthus*), threatened under both federal and state law, have not been sighted at LBNL, although but suitable habitat may be present on the Lab site. However, this would most likely be at the eastern corner of the Lab property, contiguous with open space to the north and east. Suitable habitat is not present at or near Building 51. Critical habitat for the species was re-proposed in October 2005 (USFWS, 2005d) and, as adopted in October 2006 (USFWS, 2006), includes the easternmost portion of the Lab site.

Page IV.D-1:

In addition, following the requirements of the National Historic Preservation Act (NHPA) and a 1997 Memorandum of Agreement among the Department of Energy (DOE), the California State Historical Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (Appendix F), LBNL prepared a Historic American Engineering Record (HAER) report for the Bevatron (LBNL, 1997). The HAER report was accepted by the National Park Service (NPS) in March 1998. As also required in the 1997 MOA, LBNL has consulted with the NPS regarding proper mitigation and documentation necessary to offset the demolition and removal of the Bevatron. The NPS determined that an addendum to the HAER report would meet the requirements of the Historic American Building Survey (HABS) for pre-demolition documentation of Building 51 and would serve as partial mitigation for the loss of the building. HABS documentation is further discussed and analyzed on pages IV.D-9 and IV.D-12.

Page IV.D-2:

The Northwest Information Center has indicated there is a “low potential for Native American sites in the project area” and thus “a low possibility of identifying Native American or historic-period archaeological deposits in the project area” (Northwest Information Center, 2003). As noted earlier, Native American archaeological sites in this portion of Alameda County tend to be situated on terraces along ridgetops, midslope terraces, alluvial flats, and near sources of water. The project site is not located on these types of terrain. It is located on a former slope that was mechanically terraced to construct the building, and it is not adjacent to Strawberry Creek, historically the primary natural source of water in the area. More importantly, the site was extensively graded and otherwise altered in order to construct Building 51. Therefore, there is a low potential for Native American sites to exist at the location of the proposed project.

Page IV.D-2:

Construction of Building 51 began in 1949, and the building was occupied in 1950. It was built according to the designs of the San Francisco architectural firm of Masten and ~~Hurb~~ Hurd.

Page IV.D-4:

The State Office of Historic Preservation (see below) assigned Building 51/51A a rating of “2S2,” which is defined as an “individual property determined eligible for the NRHP by consensus through Section 106 process. Listed in the California Register” (CSOHP, 2003; CSOHP, 2004).

The State Office of Historic Preservation sponsors the California Historical Resources Information System (CHRIS), a statewide system for managing information on the full range of historic resources identified in California. CHRIS is a cooperative partnership among the citizens of California, historic preservation professionals, 11 information centers, and various agencies (CSOHP, 2003).

Page IV.D-6:

The criteria consist of ~~two~~ three levels of designation for historic buildings: properties of exceptional significance (landmarks), and structures of merit, which are ~~and~~ properties that do not meet landmark criteria but are worthy of preservation as part of a neighborhood, block, or street front.

Page IV.D-11:

There are no projects planned as part of the UC Berkeley 2020 LRDP or UC Berkeley projects that would damage or destroy known archaeological or historical resources. The proposed project and all development under the LBNL and UC Berkeley LRDPs, and the City of Berkeley General Plan, would take place in a regulatory context of federal, state,

and local laws designed to avoid and minimize impacts to cultural resources. As a result, these projects would not combine with the loss of Building 51 to create a significant cumulative impact on cultural resources.

UC Berkeley's Final EIR for the Southeast Campus Integrated Projects (SCIP; see Chapter VI of the DEIR) identifies a number of historic resources that would be affected by the SCIP project. These include the Cheney House and Cheney Cottage at 2241 and 2243 College Avenue, the Piedmont Avenue Houses at 2222, 2224, 2232, 2234 and 2240 Piedmont Avenue, and California Memorial Stadium. An EIR was prepared which confirmed the historic status of these buildings and identified potential impacts to them from SCIP. The EIR identified significant impacts to these buildings and also identified mitigation measures to eliminate or reduce the severity of such impacts to the extent feasible. Impacts resulting from SCIP would not combine with impacts from the proposed project to form a significant cumulative impact to historic resources due to the vastly different building types involved (i.e., residential structures and a sports stadium compared with a building that houses a particle accelerator), as well as differing architectural styles and dates of construction. To the extent they might adversely affect historic resources, the projects involved would not be "closely related" (CEQA Guidelines Sec. 15355(b)) enough to contribute to any cumulative impact, because of, by virtue of the substantially different historic resources involved, to contribute to any cumulative impact.

Page IV.D-11:

~~One project approved by the City of Berkeley is the proposed demolition of the Blood House, a City of Berkeley Structure of Merit. Given that the Blood House, a small residential row house in downtown Berkeley, is a substantially different type of historic resource from the Bevatron, a large scale particle accelerator, the loss of the Blood House in addition to the potential loss of the Bevatron would not combine to create a significant cumulative impact on historic resources.~~

Page IV.D-11:

While the proposed project would not combine with other nearby projects to result in a significant cumulative impact on local historic resources, the buildings that house particle accelerators are of a rare type. Particle accelerators of this size exist in only three locations in the state: LBNL, ~~Lawrence Livermore National Laboratory UC Davis~~, and the Stanford Linear Accelerator Center (SLAC). ~~At these three locations, there are likely no more than seven total particle accelerators, including the Bevatron (Harvey, 2005).~~

There are approximately 75 particle accelerators currently operating worldwide, of which 25 are located in North America (Bonn University, 2006). Aside from the 88-inch Cyclotron at LBNL (Building 88), there are two other operating particle accelerator facilities located in California. They are the Stanford Linear Accelerator Center (SLAC) at Stanford University in Palo Alto, California, and the Crocker Nuclear Laboratory at UC Davis in Davis, California. The architectural design and historical status of these particle accelerator facilities are discussed and compared with the Bevatron, below.

Stanford Linear Accelerator Center: SLAC was founded in 1962 on Stanford University land near Palo Alto, California. The facility began operating in 1966, with numerous additions in the 1970s and 1990s. SLAC is a collection of many structures housing many operating elements, including the Linac/NLC (Next Linear Collider), the Positron Electron Project (PEP), the asymmetric B Factory (PEP-II), the SLAC Linear Electron Positron Collider, the Stanford Positron Electron Asymmetric Ring (SPEAR), and the Stanford Synchrotron Radiation Laboratory (SSRL) (SLAC, 2006a). Three Nobel prizes in physics have been awarded to researchers at SLAC, one each in 1976, 1990, and 1995 (SLAC, 2006b). The buildings in which the accelerators are housed are of a modern/industrial architectural design, dictated by the basic linear form of the accelerator to be a sprawling, multi-structure facility housing many different pieces of equipment.

None of the SLAC facilities are listed (nor are they known to be eligible to be listed) on federal, state, or local registers of historical resources. In the future, if SLAC were to be determined to be a historic resource, measures to protect it from demolition or substantial alteration would include those required by CEQA and/or NEPA. However, SLAC is currently operational, and is not threatened with demolition or substantial alteration.

While both Building 51 and SLAC contain particle accelerators, the architectural design of SLAC is defined by the basic linear form of the accelerator to be a sprawling, multi-structure facility, whereas Building 51 is a smaller and more contained structure housing the single, circular-form Bevatron accelerator.

Crocker Nuclear Laboratory: The 76-inch Isochronous Cyclotron at Crocker Nuclear Laboratory began operating in 1966 at UC Davis. The accelerator is one of the few of this design remaining in productive operation, although another Isochronous Cyclotron is also in use at Oak Ridge National Laboratory (U.C. Davis, 2006). The building in which the accelerator is housed is of a mid-1960s modern architectural design, and is not listed on federal, state, or local registers of historical resources. In the future, if this facility were to be determined to be a historic resource, measures to protect it from demolition or substantial alteration would include those required by CEQA and/or NEPA.

Both the Bevatron and the Crocker facility accelerator are cyclotron accelerators, however, the Crocker accelerator is currently operational and is not threatened with demolition or substantial alteration. Although the two share the same compact form, the Crocker accelerator is contained within a mid-1960s modern, four-story office/classroom/laboratory building which bears no architectural resemblance to Building 51, which has a more industrial aesthetic.

The Bevatron and the other particle accelerators in California ~~However, these particle accelerators~~ do not physically exist together as a group, as do buildings in a historic district, where the architecture of each building contributes to the overall physical and historic entity. Rather, particle accelerators are related only in an abstract way. The historic significance of the Bevatron, a scientific research device, and Building 51, the building that houses it, lies in the contributions to physics and knowledge in general that were made

using the Bevatron; the importance of these activities to LBNL in furthering its overall research programs; and the Bevatron as an important milestone in the on-going development of particle accelerators for basic research. Thus, the demolition of the Bevatron and Building 51 would not contribute to the loss of a physical historic group or entity, and therefore, the demolition would not result in a cumulatively considerable impact on historic resources.

Page IV.D-12:

Bonn University, Germany, "Particle Accelerators Around the World," available on the internet at: http://www-elsa.physik.uni-bonn.de/accelerator_list.html; accessed February 2006.

California State Office of Historic Preservation (CSOHP), Department of Parks & Recreation, Technical Assistance Bulletin #8, User's Guide to the California Historical Resource Status Codes & Historic Resources Inventory Directory, Sacramento, California, November, 2004.

California State Office of Historic Preservation (CSOHP), State of California, Technical Assistance Bulletin #8, User's Guide to the California Historical Resource Status Codes and Historic Resources Inventory Directory.

California State Office of Historic Preservation (CSOHP), State of California, Historic Properties Listing, by City (through June 2003), Sacramento, California, 2003.

Harvey, David W., PhD, Architectural Historian, Pacific Northwest National Laboratory, personal communication, July 30, 2005.

Page IV.D-13:

Stanford Linear Accelerator Center (SLAC), History of SLAC, available online at <http://www2.slac.stanford.edu/vvc/history.html>; accessed February, 2006a.

Stanford Linear Accelerator Center (SLAC), SLAC Nobel Prizes, available online at <http://www.slac.stanford.edu/history/nobel.shtml>; accessed February, 2006b.

UC (University of California) Berkeley, *Southeast Campus Integrated Projects Tiered Focused Final Environmental Impact Report (SCH #2005112056)*; October 31, 2006. Available on the internet at: http://www.cp.berkeley.edu/SCIP/FEIR/SCIP_FEIR.html.

University of California, Davis (UC Davis), Crocker Nuclear Laboratory History, available on the internet at: http://media.cnl.ucdavis.edu/Crocker/Website/b_Information/b_History/index.php; accessed February 2006.

Page IV.F-8 – 9:

- Volume contamination. Some concrete shielding blocks and concrete foundation, metal Bevatron components, and miscellaneous items (e.g., some tools) have volume contamination from induced radioactivity. For many years, the Bevatron accelerator

beams produced thermal neutrons as a byproduct of normal operations for research experiments. These neutrons had the ability to penetrate into solid items to varying depths depending on the properties of the material. This process has resulted in low levels of induced radioactivity contained within the matrix of the present-day concrete and ~~metals~~ steel. This induced radioactivity is securely contained within the matrix of the concrete and metal and cannot be removed or transferred by simple contact with the surface of the concrete.

Page IV.F-11:

- Metals from radiation-controlled areas at accelerators where the metals may have become activated by exposure to beams would not be released for unrestricted recycling into commerce. Some areas within Building 51 contain such controlled areas. Metals covered by the suspension policy would be surveyed in accordance with the June 2005 *Protocol for Survey and Release of Bevatron Materials* referenced earlier. If the metal is contaminated, it would be held in a controlled area until disposed as radioactive waste. If there is no detectable activity, it would be disposed of at an appropriate landfill with a written agreement by the landfill that the metals would be prohibited from being recycled into commerce.
- The following are not within the scope of the DOE Metals Release Suspension: the release of property or equipment for reuse for their intended purpose, metals from locations other than former Radiological Areas, the recycle of non-metal materials, and rebar and other embedded metal materials in concrete that are not surface contaminated or volumetrically contaminated due to induced activity. Such metals, including Building 51 structural steel, are subject to unrestricted, “free” release, as long as there is no detectable DOE-added radioactivity above naturally occurring levels. For example, they could be reused, recycled, or sent to a landfill taking non-hazardous solid waste.

Pages IV.F-17-18:

The RCRA CAP Process has several primary components:

- RCRA Facility Assessment (completed in 1992);
- RCRA Facility Investigation (completed in 2000);
- Interim Corrective Measures (ICMs; ~~ongoing~~);
- Corrective Measures Study (~~draft CMS, completed in 2005; see below~~) (~~submitted to DTSC in 2004~~); and
- Corrective Measures Implementation (CMI; ~~ongoing~~) (~~anticipated to begin in 2005~~).

Berkeley Lab currently is in the ~~CMS-CMI~~ phase of the RCRA CAP process. In July 2004, a draft CMS Report was submitted by the Laboratory to DTSC. The purpose of the CMS Report was to recommend appropriate remedies that can eliminate or reduce potential risks to human health from chemicals of concern in soil and groundwater and that can protect groundwater and surface water quality. In addition, National Environmental Policy Act

(NEPA) documentation was contained in Chapter 7 of the CMS Report. The CMS Report was revised in response to agency comments and resubmitted in February 2005. A CMS Report has been prepared by the Laboratory, and DTSC has determined that this report is technically complete. It is available for public review on the Lab's website at <http://www.lbl.gov/ehs/erp/html/documents-draft-cms.shtml>, and at the downtown Berkeley Public Library. The components of the RCRA CAP process are described in detail in the CMS Report, and the reader is referred to that document for information beyond that provided in this EIR.

The purpose of the CMS Report is to recommend appropriate remedies that can eliminate or reduce potential risks to human health from chemicals of concern in soil and groundwater and that can protect groundwater and surface water quality. A CEQA Initial Study/Negative Declaration (IS/ND) was prepared for the CMS (DTSC, 2005). National Environmental Policy Act (NEPA) documentation is contained in Chapter 7 of the CMS. DTSC solicited public comments on the CMS Report and the IS/ND Initial Study/Negative Declaration from April 25 through June 8, 2005, and held a public hearing on May 26, 2005. After consideration of public comments, the next step will be for DTSC to approve the CMS Report and final remedy selection and issue a Modified Hazardous Waste Handling Facility Permit. DTSC approved the Negative Declaration on August 31, 2005, and approved the CMS Report and Remedy Selection effective October 2005.

DOE issued a NEPA Environmental Assessment/Corrective Measures Study Report in September 2005 (DOE, 2005). The EA has the same content as the CMS Report, but also includes a Finding of No Significant Impact under NEPA, and responses to comments by DTSC and DOE.

The IS/ND is available on the DTSC website at http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/LBNL_CEQA_Initial-Study1.pdf. The approved CMS Report and the DOE EA/CMS Report are available on the Lab's Environmental Restoration Program website at <http://www.lbl.gov/ehs/erp/html/documents>. These documents also are available at the downtown Berkeley Public Library.

The components of the RCRA CAP process are described in detail in the CMS Report, and the reader is referred to that document for information beyond that provided in this EIR.

Page IV.F-19:

The CMS Report recommends that the following further corrective actions be undertaken in the vicinity of the project site in the CMI phase: excavation and off-site disposal of saturated and unsaturated zone soils in the plume source zone, monitored natural attenuation for the remaining plume area, and rerouting or lining of the storm drain to prevent migration of groundwater contaminants to surface water. For more complete descriptions of contamination and corrective action measures in the vicinity of Building 51, the reader is directed to the CMS Report. Once Building 51 is demolished, further investigation for potential soil and groundwater contamination at portions of the site that were previously inaccessible would take place, and appropriate corrective measures would

be undertaken as required by DTSC, in consultation with the San Francisco Bay Regional Water Quality Control Board and the City of Berkeley Toxics Management Division necessary

Pages IV.F-23 – 24:

The shipments with the highest levels of radioactivity, and the only shipments that could create a measurable dose, would be two or three shipments of depleted uranium. The estimated dose to a hypothetical passenger sitting for one hour in a car positioned two meters (about six-and-a-half feet) from a truck carrying depleted uranium would be 0.2 mrem. For a hypothetical pedestrian standing for 15 minutes at a distance of two meters from such a shipment, the estimated dose would be 0.05 mrem. These are conservative assumptions, as it is unlikely that any individual member of the public would be within this distance of these shipments for these lengths of time. Even under these circumstances, the resulting exposures would be hundreds of times below the DOE regulatory limit applicable to members of the public, and below the standards of significance set out earlier. Exposures would be less at greater distances and lesser durations.

Page IV.F-27:

Department of Toxic Substances Control (DTSC), *Initial Study and Tiered Negative Declaration for the RCRA Corrective Measures – Remedy Selection Project, Lawrence Berkeley National Laboratory, CA-EPA ID No: CA4890008986, April 2005 (draft); August 2005 (final).*

U.S. Department of Energy, *Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at Lawrence Berkeley National Laboratory Regulated under the Resource Conservation and Recovery Act, DOE/EA-1527, September 2005.*

Page IV.G-11:

- During mud-producing operations, a self-contained station would be set up where truck wheels would be cleaned to prevent dirt from leaving the site by this route. Water would be captured and recycled in this system. This station would use as little water as possible incorporating dry cleaning methods, high-pressure sprayers, and a positive shutoff valve. The station would be located away from storm drain inlets and drainages. Discharge water would be collected and disposed of in accordance with all applicable laws and regulations.

Page IV.K-9-10:

Berkeley Laboratory routinely informs its construction subcontractors that truck routing be directed toward University Avenue, Oxford Street between Hearst and University Avenues, Hearst east of Shattuck Avenue, Shattuck Avenue, Adeline Street, and Ashby Avenue, and that trucks avoid the Warring/Derby/Belrose/Claremont corridor. As part of the proposed project, contract specifications would include requirements that truck shipments would

follow a subset of these routes: in general, shipments from the site would proceed down Cyclotron Road to Hearst Avenue and then proceed west on Hearst Avenue, south on Oxford Street, and west on University Avenue to I-80. Shipments to the site would reverse these directions. This is also the route designated for radioactive and mixed waste in a 1996 agreement between LBNL and the City of Berkeley (see discussion under Impact IV.K-4, below). The location of the receiving facilities would dictate what direction on I-80 the trucks would travel.

Page IV-K-10

An estimated maximum of about 4,700 one-way truck trips would be required over the four- to seven-year term of the project [Footnote added:]

A schedule variant of the project could reduce the minimum duration of the project from four years to three and a half years, but for the reasons discussed here, this reduction in schedule would not increase the maximum haul truck traffic generation rates and therefore would not change the resulting traffic impacts and mitigation measures. See Appendix E.

Demolition work would be performed approximately 40 hours per week, Monday through Friday; normal work hours would be between 7:00 a.m. and 3:30 p.m. It is possible that some work, including truck loading and departure, would take place on Saturdays and/or Sundays, although this would be infrequent. [Footnote added:]

An alternative-sequence project variant that would demolish Building 51 before the disassembly and removal of the Bevatron itself would, for the reasons discussed here, not increase the maximum haul truck traffic generation rates and therefore would not alter traffic and traffic-related impacts and their mitigation measures. See Appendix E.

Page IV.K-13-14:

- As described in Section IV.F, for volume contamination from induced radioactivity, the DOE-approved detection limit for radioactivity is 2 picoCuries/gram (pCi/g). The DOT definition of radioactive waste differs from that of DOE. Items with induced activity are not managed under DOT regulations as radioactive where the sum of the radioactivity of all of the isotopes in an item expected to be encountered during this project is 270 pCi/g or less. Thus, items with radioactivity between 2 pCi/g and 270 pCi/g would be classified as “radioactive” by DOE, but not by DOT. Only items with an induced activity above DOT isotope-specific activity thresholds are required to be managed as a DOT hazardous material for shipment to a disposal facility.

Page IV.K-16-17:

As described in Chapter VI, CEQA Considerations, planned, pending, and/or reasonably foreseeable projects in the area of the proposed project include rehabilitation of Buildings 77 and 77A, Resource Conservation and Recovery Act (RCRA) Corrective Measures Implementation (CMI), construction of an Animal Care Facility, development in the surrounding area including growth and development within the City of Berkeley as envisioned in the 2001 Berkeley General Plan, implementation of the 2020 LRDP for UC

Berkeley, and several other UC Berkeley projects. Potential projects identified in the LBNL 2006 Long-Range Development Plan Draft Environmental Impact Report (circulated January 22, 2007 through March 23, 2007) have also been considered as part of the cumulative context for this analysis. These potential projects include the approved User Support Building, the proposed Guest House, the planned Helios Facility, and the planned Computational Research and Theory (CRT) Building, and are discussed below.

Page IV.K-16:

The proposed project would generate no new operational (long-term) vehicle trips and would have a less-than-significant effect on long-term traffic conditions. Under cumulative conditions, traffic volumes would increase on area roadways and at study intersections due to the potential development cited above. Recent (2004) estimates of increases in roadway and intersection traffic volumes were presented in the University of California at Berkeley's *2020 Long Range Development Plan & Chang-Lin Tien Center for East Asian Studies Final EIR*. The intersections in the project area cited under "Setting" above would continue to operate at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours, except for the University Avenue/San Pablo Avenue, University Avenue/Sixth Street, and Gayley Road/Stadium Rim Way intersections, where delays within LOS F would increase. As described under Impact K.1 above, the project would generate a short-term increase in traffic volumes on area roadways that would fall within the daily fluctuation of traffic, which would not be noticeable to the average motorist. The project-generated trips would add negligible traffic to long-term cumulative conditions. Demolition traffic would be short-term and incremental, and, with the exception of the Lab's Guest House Projects and projects in UC Berkeley's Southeast Campus Integrated Projects (see Chapter VI), it is not likely that the project's peak daily trip generation (trucks and worker vehicles), during the project's final phase, would cumulatively coincide with the projects identified in this EIR.

The approved User Support Building would not contribute to peak-hour AM and PM traffic conditions, as construction trips would be limited to off-peak hours. The latter 11 months of the proposed Guest House construction could coincide with the initial activity phase of the Bevatron project. This would not be cumulatively considerable, as the later construction phases of the moderately-sized Guest House would include relatively few truck trips, as most of the building material would be transported during the earlier phases. The CRT and Helios Buildings would likely coincide with the first two years of the Bevatron project, however it is not expected that new cumulatively considerable impacts would result. Those projects will be tiered from the new 2006 LRDP and EIR (currently proposed to be considered for adoption and certification in the summer of 2007), which impose restrictions and management practices on new construction projects to avoid and minimize cumulative construction traffic from LBNL during peak commute hours.

It is anticipated that construction of the Guest House would overlap with the proposed project. Mitigation measures applicable to construction traffic included as part of the

proposed project would also apply to construction of the Guest House, and would reduce the likelihood of significant cumulative effects.

With respect to the potential cumulative traffic effects of UC Berkeley's SCIP, construction and thus construction-related traffic from the SCIP Memorial Stadium renovation and the other six SCIP projects (including a parking structure, a new Law/Business school building, and renovations to existing law school, business school, and student residential buildings) would overlap with the proposed project. The projects would be within the growth envelope analyzed in UC Berkeley's 2020 LRDP EIR, and would result in space and population levels below levels anticipated in UC Berkeley's 2020 LRDP. The Final EIR for SCIP finds that cumulative transportation impacts would be consistent with the transportation impacts identified in the UC Berkeley 2020 LRDP EIR (UC Berkeley, 2006). Because those impacts are assumed as part of the cumulative development assumptions incorporated into this section, no additional cumulative transportation impacts would result from the proposed Building 51 project in combination with cumulative development.

In any case, implementation of Mitigation Measure ~~IV.K-1K.1.1~~ would ensure that traffic-generating activities associated with concurrent projects would not have a significant effect on traffic conditions.

Page IV.K-17:

UC (University of California) Berkeley, *Southeast Campus Integrated Projects Tiered Focused Final Environmental Impact Report (SCH #2005112056)*; October 31, 2006. Available on the internet at: http://www.cp.berkeley.edu/SCIP/FEIR/SCIP_FEIR.html.

Page IV.L-10:

[Note regarding revisions to the traffic impacts of the On-Site Rubbling Alternatives, below (pages IV.L-10, V-7, 9-10): Information obtained subsequent to the publication of the DEIR indicates that the On-Site Rubbling Alternative would not in fact generate fewer truck trips than the proposed project, as (1) it is speculative whether the rubble would be used on-site, and (2) the presence of air voids in rubble would mean that rubble would have little or no advantages over solid blocks in terms of the tonnage of concrete that could be placed on trucks].

Another recycling option for concrete with no hazardous characteristics is to send it to commercially operated off-site locations that break concrete into rubble. ~~Rubbling offers transportation advantages, as rubble material fills the volume capacity of trucks more efficiently than unbroken concrete, thereby decreasing the number of truck trips generated in hauling concrete to subsequent destinations.~~ The resulting rubble could be released for such uses as fill for construction projects and road building, or it could be sent to landfills.

Page V-7:

Under this alternative, most of the concrete from the building structure (i.e., walls and floors), foundation, and many of the concrete blocks shielding the Bevatron would be rumbled on-site. Metal (e.g., rebar) in the debris would be separated and disposed of separately. Only concrete free of detectable added (i.e., non-naturally-occurring) radioactivity and otherwise clear of contaminants would be rumbled. The rumbled material and segregated reinforcing steel would be recycled if public or private sector demand was available at the time of production. If not, it would be disposed of at a landfill. LBNL could use the rubble as aggregate or fill material if the need for such materials coincided with their production; however, this is speculative.

This alternative would share most of the advantages and disadvantages of the proposed project, although impacts would vary in some respects (e.g., this alternative would result in increased dust ~~fewer generation~~ but the impact on air quality impact would remain less than significant as explained below ~~fewer truck trips~~). However, sufficient space adjacent to Building 51 does not currently exist for this alternative to be feasible, and a site or sites would have to be made available elsewhere at LBNL, at a sufficient distance from off-site sensitive receptors to avoid nuisance impacts.

Page V-9:

Under the On-Site Rubbling Alternative, impacts to public services would be essentially the same as under the proposed project because activities under this alternative would result in similar demand for public services. Impacts would be less-than-significant under both the proposed project and this alternative. ~~Under this alternative, the proposed project-related less than significant impact related to potential project demolition truck trips that could cause wear and tear on public roads and highways would be slightly less than under the proposed project because this alternative would require slightly fewer heavy truck trips that would use public roadways.~~

Pages V-9-10:

Under this alternative, worker commute and truck traffic would be essentially the same. However, truck traffic would be slightly reduced since a portion of the demolished concrete materials that otherwise would have to be sent off-site could potentially be reused on-site. Also, for the concrete that still would have to be shipped from the Laboratory, greater volumes could be transported per truck because rumbled concrete would better conform to the shape of truck beds, thereby allowing fewer truck trips. A reduction in truck trips would reduce the already less-than-significant impacts that would be created by the proposed project.

Page VI-3:

Resource Conservation and Recovery Act (RCRA) Corrective Measures Implementation (CMI)

As a condition of the Hazardous Waste Facility Permit issued by the Department of Toxic Substances Control (DTSC), LBNL has been required to investigate and address historical releases of hazardous wastes and materials that may have occurred at the site. The investigation and cleanup process consists of multiple steps, many of which have already been completed. The areas that need to be addressed have been identified and investigated. Cleanup activities have already been conducted in some areas as part of Interim Corrective Measures (ICMs) that were implemented to protect human health or the environment. The final step of the cleanup process is to determine the best way to clean the remaining contamination and to begin the final clean up. The document evaluating possible cleanup methods and recommending which cleanup methods to implement, called the Corrective Measures Study Report, or CMS Report, has been ~~was~~ made available to the public and other agencies for their review and comment, and was approved by DTSC effective October 2005. The selected cleanup measures of the CMS Report are being carried out as part of the Corrective Measures Implementation phase of the RCRA Corrective Action Plan process (see Chapter IV.F, Hazards and Hazardous Materials).

~~DTSC is currently considering approval of the CMS Report. If DTSC approves the CMS Report, the selected cleanup measures would be put in place as part of the Corrective Measures Implementation phase of the Project. CEQA coverage has been provided by an Initial Study/Negative Declaration tiered from the 1987 LRDP EIR, as amended (DTSC, 2005).~~

Page VI-4:

The approved three-story, approximately 30,000-gross-square-foot building will consist of assembly space, support laboratories, and offices in support of the Advanced Light Source user facility at LBNL. An Initial Study/Mitigated Negative Declaration for CEQA and a NEPA Categorical Exclusion were prepared in November 2006. The public comment period under CEQA closed on December 8, 2006. The Initial Study/ Mitigated Negative Declaration was adopted and the project was approved by the Regents at the January 2007 Regents' meeting. A NEPA categorical exclusion was adopted for this project by DOE on December 6, 2006. This building will occupy space currently occupied by Building 10, which is obsolete and will be demolished. Demolition is planned for spring 2007 and construction is planned for between early 2008 and mid-2010.

Berkeley Lab Guest House

Berkeley Lab is in the planning stage for the construction and operation of a new Guest House to serve visiting scientists, faculty and students. Many of the visitors using the Lab's facilities—including the Advanced Light Source, National Center for Electron Microscopy, 88" Cyclotron, and the Molecular Foundry—are from outside the Bay Area and must

obtain short-term housing. This proposed three-story, approximately 25,000-gross-square-foot building would hold up to 120 beds for visiting researchers and other guests of LBNL.

An Initial Study/Negative Declaration was circulated for public review and comment from May 1 to May 31, 2007. The Lab is in the process of preparing responses to comments and the Final EIR on the Guest House project. The Guest House project is anticipated to be presented to The Regents for approval in July 2007. If this project is approved, construction would take place between late 2007 and early 2009. The Guest House would be constructed near the Advanced Light Source, the Lab's largest user facility. The Guest House site is near the center of the Laboratory, west and southwest of Building 2 and on the site of the demolished Building 29 and Trailer 29D, and existing Trailers 29A, 29B, and 29C. It would use existing utilities infrastructure in the vicinity.

Page VI-4-5:

The UC Berkeley 2020 LRDP EIR also included a project-level analysis of the Chang-Lin Tien Center for East Asian Studies. The proposed Center includes two buildings: Phase 1, a four-story building of approximately 67,500 gsf, and Phase 2, a building planned to accommodate up to 43,000 gsf. The Phase 1 building would house the East Asian Library, while the Phase 2 building would house the Institute of East Asian Studies and the Department of East Asian Languages and Culture. The Tien Center buildings are proposed for construction along the southern and western perimeter of Observatory Hill (UC Berkeley, 2004). At this point in time, Phase 1 is the only project that has received funding to proceed. Construction for Phase 1 is underway and scheduled to begin in August and continue until Fall for approximately 18 months through February 2007 (Shaff, ~~2006~~2005).

Page VI-5:

Early Childhood Education Center

On April 14, 2005, UC Berkeley issued a Notice of Intent to Adopt a Mitigated Negative Declaration for its proposed Early Childhood Education Center. UC Berkeley proposes to construct and operate an Early Childhood Education Center, serving up to 78 children, on the north side of Haste Street, mid-block between Dana and Ellsworth Streets, in Berkeley, California. The 17,880 square foot project site is adjacent to a large campus parking lot. The project site itself is presently used as a surface parking lot with 53 marked vehicle spaces (UC Berkeley, 2005a). Construction of this facility is underway and is scheduled to begin in August 2005 and end in 2007 by August 2006 (Shaff, ~~2006~~2005).

Page VI-5-6:

Center for Information Technology Research in the Interest of Society (CITRIS) Headquarters/Davis Hall North Replacement Project

The Center for Information Technology Research in the Interest of Society (CITRIS) Headquarters project is part of UC Berkeley's NEQSS projects. The demolition of Davis Hall North, located in the north east section of the Berkeley campus near the intersection of

Hearst and LeRoy Avenues, began at the end of August 2004 to make way for a state-of-the-art replacement facility that will provide the headquarters for CITRIS. The project will replace the existing Davis Hall North building, and is designed to contain about 79,420 assignable square feet within a total area of 142,000 gross square feet. Major building components of this research and teaching facility include flexible dry laboratory space, distance learning classrooms, and an auditorium, multi-media center, and office and administrative space (UCOP, 2002). Construction hours are 7:00 a.m. to 7:00 p.m. on weekdays. Construction of the new CITRIS Headquarters facility is ~~expected to~~ underway and scheduled to continue through ~~2007~~ 2008 (UC Berkeley, 2005b; Shaff, 2006).

Page VI-6:

Bancroft Library

UC Berkeley plans to retrofit the Bancroft Library, which is located in the central portion of the campus to the north of Wheeler Hall between South Hall Road and Sather Road. The project will also include some program improvements. Construction for this project is ~~expected to begin in~~ underway ~~December 2005~~ and expected to continue for ~~approximately 18 months~~ through ~~June 2007~~ 2008 (Shaff, ~~2006~~2005).

UC Berkeley Pedestrian Bridge

UC Berkeley plans to construct an Americans with Disabilities Act-compliant pedestrian bridge to connect the north and south components of the Foothill housing project. As currently proposed, the pedestrian bridge would be constructed over Hearst Avenue, just east of Gayley Road, connecting the two sides of the Foothill dormitories and would provide access between the dormitories and campus. The Foothill Bridge is currently under construction and should be completed during the summer of 2007.

Southeast Campus Integrated Projects

UC Berkeley plans to implement seven projects, referred to as the Southeast Campus Integrated Projects (SCIP). The SCIP includes seismic and program improvements at the California Memorial Stadium; construction of a parking structure and sports field at the current site of Maxwell Family Field; construction of an 180,000 gsf building linking the Law and Business schools; landscape improvements at the Southeast Campus and Piedmont Avenue; interior improvements at selected buildings at the School of Law and the Haas Business School; and renovation and restoration of the Piedmont Avenue houses (five structures and site environs from 2222 to 2240 Piedmont Avenue). The SCIP Final EIR, which was tiered from the UC Berkeley 2020 LRDP and LRDP EIR, was completed in October 2006. Project construction for all of the projects is not definite at this time, but is expected to begin in 2007 and be completed in 2012 (UC Berkeley, 2006).

Page VI-7:

Molecular Foundry Building

The *Final Tiered Initial Study Checklist and Mitigated Negative Declaration for the Construction and Operation of the Molecular Foundry* was issued in April 2003 (SCH No. 2002122051). Construction operations and attendant impacts for this project ~~are expected to be~~ were completed by ~~December 2005 or January in~~ 2006, prior to the start of physical impacts from the Building 51 and Bevatron demolition project, which ~~would not start~~ is not anticipated to begin until ~~February or March 2006~~ early 2008. Therefore, this project has not been considered for cumulative impacts assessment purposes.

UC Berkeley Memorial Stadium Upgrade Project

~~According to UC Berkeley Facilities Services, no detailed information about this project is available. While it is tentatively anticipated that some construction activity associated with this project would occur, because details are not available, it would be speculative to evaluate this project. At the time that a specific project is proposed for the stadium, environmental review would be conducted by UC Berkeley.~~

The Southeast Campus Integrated Projects (SCIP) include seismic and program improvements at the California Memorial Stadium, including a 158,000-gsf athletic training center and 102,000 gsf of additional new academic and support space at the stadium. The SCIP EIR, tiered from the UC Berkeley 2020 LRDP EIR, identified significant, unavoidable impacts in the areas of aesthetics (effects on the character of Gayley Road and on views from Panoramic Hill); cultural resources (changes to Memorial Stadium, demolition of several structures, and alterations to buildings and landscape along Piedmont Avenue); geology (earthquake risk); noise (due to construction and demolition and due to the potential for additional events at the stadium); traffic (effects at the Durant/Piedmont and Bancroft/Piedmont intersections⁴); and utilities and service systems (increased demand on wastewater facilities) (UC Berkeley, 2006).

UC (University of California) Berkeley, *Southeast Campus Integrated Projects Tiered Focused Final Environmental Impact Report (SCH #2005112056)*; October 31, 2006. Available on the internet at: http://www.cp.berkeley.edu/SCIP/FEIR/SCIP_FEIR.html.

Page IX-2:

Bonn University, Germany, "Particle Accelerators Around the World," available on the internet at: http://www-elsa.physik.uni-bonn.de/accelerator_list.html; accessed February 2006.

⁴ These impacts could be mitigated with the implementation of mitigation measures from the UC Berkeley 2020 LRDP EIR but are identified as significant and unavoidable because they are outside the jurisdiction of The Regents and could only be implemented at the discretion of the City of Berkeley.

Page IX-3:

California State Office of Historic Preservation (CSOHP), Department of Parks & Recreation, Technical Assistance Bulletin #8, User's Guide to the California Historical Resource Status Codes & Historic Resources Inventory Directory, Sacramento, California, November, 2004.

California State Office of Historic Preservation (CSOHP), State of California, Historic Properties Listing, by City (through June 2003), Sacramento, California, 2003.

Department of Toxic Substances Control (DTSC), *Initial Study and Tiered Negative Declaration for the RCRA Corrective Measures – Remedy Selection Project, Lawrence Berkeley National Laboratory, CA-EPA ID No: CA4890008986, April 2005 (draft); August 2005 (final).*

Page IX-5:

Harvey, David W., PhD, Architectural Historian, Pacific Northwest National Laboratory, personal communication, July 30, 2005.

Page IX-8:

Shaff, Christine, Communications Manager, University of California, Berkeley, Facilities Services, Capital Projects, personal communication, February 6, 2006.

Stanford Linear Accelerator Center (SLAC), History of SLAC, available online at <http://www2.slac.stanford.edu/vvc/history.html>; accessed February, 2006a.

Stanford Linear Accelerator Center (SLAC), SLAC Nobel Prizes, available online at <http://www.slac.stanford.edu/history/nobel.shtml>; accessed February, 2006b.

State Office of Historic Preservation (SOHP), State of California, Historic Properties Listing, by City (through June 2003), Sacramento, California, 2003.

UC (University of California) Berkeley, *Southeast Campus Integrated Projects Tiered Focused Final Environmental Impact Report (SCH #2005112056)*; October 31, 2006. Available on the internet at: http://www.cp.berkeley.edu/SCIP/FEIR/SCIP_FEIR.html.

University of California, Davis (UC Davis), Crocker Nuclear Laboratory History, available on the internet at: http://media.cnl.ucdavis.edu/Crocker/Website/b_Information/b_History/index.php; accessed February 2006.

U.S. Department of Energy, *Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at Lawrence Berkeley National Laboratory Regulated under the Resource Conservation and Recovery Act, DOE/EA-1527, September 2005.*

CHAPTER III

Comments on the Draft EIR by Individuals and Organizations

A. Persons Commenting at the Public Hearing

The following persons provided public comments at the formal Public Hearing on the Draft EIR, held at the North Berkeley Senior Center on November 16, 2005. The transcript of the hearing is contained in section C., below. Comment identification numbers are in parentheses:

1. Jim Sharp (H-1 - H-2)
2. Daniella Thompson (H-3 - H-5)
3. James Cunningham (H-6 - H-8)
4. Mark McDonald (two appearances) (H-9 - H-10; H-19 - H-20)
5. Terry Sal (H-11 - H-13)
6. L.A. Wood (two appearances) (H-14; H-17 - H-18)
7. William Woodcock⁵ (H-15 - H-16)
8. Charlene Woodcock (H-21)
9. Ken Parks (H-22)

B. Persons and Organizations Commenting in Writing

Comment identification numbers are in parentheses:

1. Gene Bernardi, April 15, 2005 (GB-1 – GB-4)
2. James Sharp, April 15, 2005 (JMS-1 – JMS-9)
3. Senta Pugh Chamberlain, on behalf of Owen Chamberlain, October 24, 2005 (SPC-1)
4. William R. Kirkpatrick, Manager of Water Distribution Planning, East Bay Municipal Utility District, November 22, 2005
5. Eric Lai, December 6, 2005 (LAI - 1)⁶
6. Phil Kamlarz, City Manager, City of Berkeley, December 7, 2005 (COB-1 - COB-13)
7. Jill Korte, City of Berkeley Landmarks Planning Commission, December 7, 2005 (LPC-1 - LPC-10)
8. Committee to Minimize Toxic Waste, December 7, 2005 (CMTW-1 - CMTW-35)
9. Daniella Thompson/Jim Sharp, December 7, 2005 (TS-1 - TS-3)
10. Dale Smith, December 8, 2005 (DS-1 - DS-3)⁷

Note: No state agency submitted comments on the Draft EIR.

⁵ Misidentified as “Brian Woodcock” in the transcript.

⁶ Date e-mail sent.

⁷ Postmark date.

C. Written Comments Received by LBNL

Following is a transcript of the public hearing and the comments made therein, as well as copies of written comments. Comments are numbered and keyed to the various communications. Chapter IV provides LBNL responses to these comments.

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PUBLIC HEARING FOR DRAFT ENVIRONMENTAL
IMPACT REPORT BUILDING 51
AND BEVATRON DEMOLITION PROJECT
LAWRENCE BERKELEY NATIONAL LABORATORY
NOVEMBER 16, 2005

REPORTER'S TRANSCRIPT OF PROCEEDINGS
BY: JOANNA BROADWELL, CSR 10959



CLARK REPORTING
2161 SHATTUCK AVENUE, SUITE 201
BERKELEY, CALIFORNIA 94704
(510) 486-0700

1 MS. POWELL: Good evening. I'm Terry Powell. And
2 I'd like to welcome you to this public hearing for the
3 Draft EIR on Berkeley Lab's Building 51 and Bevatron
4 demolition project. Just some general information for you,
5 that bathrooms are down the hall on your left, and we have
6 some guidelines for you for the public hearing. And they
7 include the following:

8 The purpose of the meeting is to receive your
9 comments on the draft EIR. The meeting gives you the
10 opportunity to make comments on the draft environmental
11 review for this project. Responses to your comments will
12 not be given tonight. That's a standard procedure. So I
13 just want to lower your expectations about that.

14 Please give your full name for the record. You
15 will be given three minutes, so try to keep your questions
16 or comments to that time. You may step forward to the
17 microphone, which we'll move to the front of this middle
18 aisle, to make your comments.

19 Sabah Hassam, over here near the entry door, has a
20 timer, and it will ring when three minutes are up. That is
21 your signal to let the next speaker start. If there is
22 time available after everyone has had a chance to speak and
23 you would like to make additional comments, please do so.
24 There are salmon-colored cards for you. They say "Speaker
25 Comment" or "Comment Speaker" cards. There are some

1 handouts on the front table. And there is a sign-in sheet.

2 You may also write your comments on the cards. And
3 you can hand them in at the sign-in table. Don Medley has
4 kindly agreed to sit there and receive them. Please feel
5 free to write your comments and hand them in tonight or
6 send them directly to the Lab. Dan Kevin's address is on
7 the back of the comment card.

8 UNIDENTIFIED SPEAKER: How long do you expect
9 comments?

10 MS. POWELL: Which expect comments through the
11 comment period. Thank you. It ends December 7th. A court
12 reporter is present to record the meeting, Joanna, thank
13 you. This meeting is scheduled for approximately two
14 hours, 6:30 to 8:30 p.m. We are using this portable audio
15 system. Let us know if you can't hear something. Can
16 everyone hear all right? Okay. If you would like to
17 receive future notices of environmental reviews again,
18 there are blue cards on the table. Please fill out a blue
19 card and we'll add your name to the mailing list.

20 The environmental documents for the project are
21 available on the Lab's website,
22 www.lbl.gov/community/nrevdocs. They are also available at
23 the Berkeley Public Library, the central library downtown
24 on the second floor reference desk. Two copies are
25 available. The agenda for tonight's meeting is posted on

1 the screen behind me.

2 So we'll now move on to Item 2, the project
3 description. Margaret Goglia, project director.

4 MS. GOGLIA: Thanks. My name is Margaret Goglia,
5 and I'll be just giving a very brief overview of the
6 project. The project is located at the Berkeley National
7 Laboratory. The proposed project is located within the
8 City of Berkeley portion of the laboratory in the west
9 central part. And it is adjacent to Lawrence Road.
10 Building 51 is a large shed-like structure intended to
11 provide weather protection for the Bevatron, a large
12 scientific apparatus.

13 Currently the building is fire life safety code
14 non-compliant. It is a seismic risk and has numerous roof
15 leaks. The Bevatron was a large weak-focussing synchrotron
16 accelerator. It operated from 1954, and its operations
17 ended in 1993. It is approximately 180 feet in diameter,
18 and it contains approximately 11 tons of steel and metal.
19 Encircling the Bevatron are approximately 700 concrete
20 shielding blocks. The Bevatron apparatus is largely
21 physically inaccessible right now. And it is not
22 operational. It no longer can operate for its intended
23 purpose. If you flipped the switch it would not turn on.

24 To give you an idea of what the Bevatron looks like
25 within the building, this is a cross-section through the

1 building. And the Bevatron is marked in this slide. For
2 the purposes of this proposed project, Building 51 includes
3 the annex building, sometimes referred to as Building 51A.
4 This slide shows some of the functions that took place in
5 Building 51 and also has an arrow pointing to where
6 Building 51A is. Building 51A was a shed-like annex built
7 almost like a lean-to attached to Building 51, pretty much
8 immediately following the completion of the Building 51
9 construction.

10 The project scope, these are the main activities
11 that compose the proposed project. The project will begin
12 with utility shut-downs. The Building utilities such as
13 power and water will be shut down and disconnected. Some
14 of the utilities that traverse the site will need to be
15 relocated. That will be followed by shield block removal.
16 This is the first major activity. It is followed by
17 Bevatron disassembly and removal. Once that is completed,
18 the conventional facility, the building structure itself,
19 will be removed, and any contaminated soil beneath the
20 Building will be also removed. The foundation area will be
21 backfilled with clean fill and compacted.

22 Approximately half of the shipments generated by
23 this proposed project will be non-hazardous conventional
24 building demolition debris materials. And we will look for
25 opportunities to recycle or reuse as much of that material

1 as possible. Many of the materials from the building will
2 be materials that are commonly encountered in older
3 scientific buildings, such as asbestos. For example, there
4 are transit exterior panels that clad the building which
5 have asbestos materials in the transit panels and will be
6 disassembled carefully, individually, rather than knocked
7 down. And they will be disposed of appropriately at an
8 appropriate site that takes asbestos materials.

9 We believe there may be PCBs still remaining in the
10 building, as there are in many older buildings, possibly
11 mercury in switches, which is also common in older
12 buildings, leased and machine oil. Each of these will be
13 handled according to environmental and health and safety
14 requirements. There is known to be low-level radioactive
15 waste in the building. The Bevatron and some of the
16 shielding concrete will have low-levels of detectible
17 radioactivity integral to the material themselves. And
18 that will be disposed of at appropriate locations after
19 careful survey and characterization.

20 There may be a few materials that are mixed waste.
21 Mixed waste is any material which both has hazardous
22 qualities, as in the items that were on the top of the
23 list, and it, in addition, has low-level radioactive
24 qualities. So it would be any material that is both
25 low-level radioactive waste and some other kind of

1 hazardous waste. Those materials would also be disposed of
2 as appropriate for the particular kind of material.

3 This slide shows the project area boundary where a
4 fence is planned. The safety and security fence is planned
5 and the shaded area shows where the demolition zone will
6 be, that is, the area that will be demolished. In-bound
7 empty trucks and out-bound trucks carrying loads of various
8 materials to be disposed of will be created by this
9 project. In addition to that in-bound trucks carrying
10 clean fill to fill the foundation hole will be used during
11 the latter part of the project.

12 The project is expected to have between 20 and 25
13 workers at any particular given time as an average with a
14 maximum of 50 workers working on the project. They will
15 all be accommodated in parking spaces at the Berkeley
16 National Lab. And the project will use control measures to
17 control all of the hazardous materials, dust, water,
18 including storm water and hazardous materials handling and
19 disposal throughout the project. Thank you.

20 MR. KEVIN: I am Dan Kevin. I will be talking
21 about the CEQA environmental process. It's really
22 described in the draft EIR, but I am going to summarize it
23 here. The EIR has been prepared pursuant to the applicable
24 provisions of CEQA, which is the California Environmental
25 Quality Act and its implementing guidelines, the CEQA

1 guidelines, and the University of California procedures for
2 implementation of CEQA.

3 The University of California is the lead agency for
4 the EIR. The Regents of the University of California,
5 which is the University's decision-making body, have
6 delegated authority to the director of Lawrence Berkeley
7 National Lab, LBNL to approve this type of project for CEQA
8 purposes.

9 CEQA requires that before a decision can be made by
10 a state or local government agency to approve a project
11 with potentially significant environmental effects, an EIR
12 must be prepared. It fully describes the environmental
13 effects of the project. The EIR is an informational
14 document for use by governmental agencies and the public.
15 It is intended to identify and evaluate potential
16 environmental consequences of the proposed project, to
17 identify mitigation measures that would lessen or avoid
18 significant adverse impacts, to examine feasible
19 alternatives to the project.

20 The information contained in the EIR is reviewed
21 and considered by the lead agency prior to its action to
22 approve, disapprove or modify those projects. This project
23 is a tiered project EIR. It is tiered from three
24 programmatic facility-wide CEQA documents issued in 1987,
25 1992 and 1997. And they cover Berkeley Lab as a whole.

1 These are collectively referred to as a 1987 long-range
2 development plan or LRDP. The EIR is amended.

3 The LRDP itself is Berkeley Lab's primary planning
4 document. LBNL is undergoing a multi-year process to
5 prepare a new LRDP and LRDP EIR. If adopted by the
6 Regents, these documents would replace the 1987 LRDP EIR as
7 amended and guide future developments for LBNL for
8 approximately 20 years. It is expected that draft versions
9 of these documents will be available for public review in
10 late 2006.

11 The new LRDP EIR will consider the Building 51, the
12 Bevatron demolition project and its analysis of cumulative
13 impacts. Although the current LRDP, the 1987 LRDP EIR as
14 amended are the applicable guiding documents for this
15 project, it is anticipated that the proposed project would
16 also be consistent with the new LRDP and the LRDP EIR.

17 In 1987 is amended analyzed full implementation of
18 uses and physical development proposed under the 1987 LRDP
19 through the year 20XX, which is an indeterminate horizon
20 year flexibly projected to occur sometime after the year
21 2000. Measures were identified in the 1987 LRDP EIR as
22 amended and adopted by the Regents to mitigate the
23 significant adverse project and cumulative impacts
24 associated with that growth.

25 The contents of this EIR include but are not

1 limited to the following: The project description and
2 objectives, analysis of project environmental impacts in 12
3 areas. This includes description of measures to mitigate
4 impacts both existing mitigations measures under the 1987
5 LRDP EIR and mitigation measures that are specific to this
6 project.

7 For the purpose of conservative impact analysis
8 under CEQA, the EIR concludes that impacts can be mitigated
9 to less than significant levels in all areas except for
10 cultural resources. The areas analyzed are aesthetics, air
11 quality, biological resources, cultural resources, geology
12 in soils, hazards and hazardous materials, hydrology and
13 water quality, land use and planning, noise, public
14 services, transportation and traffic, and utilities,
15 service systems and energy.

16 Other areas such as agricultural resources, mineral
17 resources, population and housing and recreation were
18 focussed out of the EIR in an earlier initial study which
19 was issued on March 15th, 2005 as part of the notice of
20 preparation for this report. The EIR also includes
21 description and analysis of alternatives to the proposed
22 project and consideration of several additional areas
23 required under CEQA: Significant irreversible
24 environmental changes, growth inducement, and cumulative
25 impacts.

1 As I mentioned earlier, on March 15th, 2005, LBNL
2 issued a notice of preparation to governmental agencies,
3 organizations, interested persons for the proposed project.
4 Public scoping was held on March 31st, in 2005 in this room
5 and comments received during the proposed -- I'm sorry,
6 projects received regarding the proposed content of the EIR
7 have been considered in developing the scope of this draft
8 EIR. This draft EIR is circulated for review and comment
9 by the public and other interested parties, agencies and
10 organizations over a 47-day period.

11 It is from October 21st, 2005 to December 7th of
12 this year. In this public meeting the public is invited to
13 offer comments on the draft EIR. In addition, comments or
14 questions about this EIR can be addressed to me. On the
15 addresses in the EIR, but I'll give it to you here, it is
16 Dan Kevin, Environmental Planning Group, Lawrence Berkeley
17 National Laboratory. One Cyclotron Road, Mail Stop 69R0201
18 in Berkeley, California, 94720.

19 Following the public review, responses to all
20 substantive comments received on the adequacy of the draft
21 EIR and submitted within the specified review period will
22 be prepared and included in the final EIR. It is
23 anticipated at this time the final EIR and mitigation
24 monitoring program will be reviewed by the LBNL director
25 who will then determine whether to certify its final EIR as

1 complete and adequate and approve the project.

2 Copies of the final EIR and the mitigation
3 monitoring program will be made available to the public
4 project approximately one week prior to the director's
5 decision at the same locations that the draft EIR was made
6 available during the public review period. That is they
7 will be posted on the laboratory website and will also be
8 environmental in the Berkeley Public Library.

9 MR. KEVIN: Thank you, Dan. Now we are going to
10 begin our public comments. I need the cards. And Tim has
11 another meeting. So if you would start, you could help me
12 by testing. Will you say "testing, testing?"

13 MR. SHARP: Testing, testing, testing. Good
14 evening. I am Jim Sharp, a long-time Berkeley resident.
15 My bottom line is that I think this hearing is about 12 to
16 maybe 18 months early. I don't know whether you listened
17 to the news tonight, but Karen Hughes was on the radio.
18 She's the deputy under Secretary of State dealing with Iraq
19 strategy. And I was impressed with what she said, that
20 they have -- that the Bush strategy in Iraq is the "clear
21 hold and build" strategy which sounds almost identical to
22 this particular project. It's occurred to me as I've
23 browsed the draft EIR that there is an absurdity here that
24 should be apparent to anybody that's paid attention for the
25 last several years.

1 To clear this project will take between four and
2 seven years starting, I assume, no sooner than 2006. So we
3 can assume that it would be cleared by 2010 to 2013, with
4 maybe a hold period between, a little bit, and then maybe a
5 build sometime after that, I would assume. You have two
6 and a quarter acres that would just be crying out for
7 something. And I could imagine that there will be a build
8 period which, let's say for the sake of argument, it might
9 extend to 2015 or 2018 or something. That is quite a ways
10 into the future.

H-1

11 However, we are gearing all of this off of a 1987
12 long-range development plan amended twice, last in 1997.
13 And I think it makes a lot of sense to wait for the next
14 long-range development plan to come out with new fresh
15 mitigations. Now, we had a notice of preparation on that
16 five years ago, five years ago. And then we had another
17 two years ago and said we're still going to do it. Well,
18 we're still waiting for that, but it seems to me logical if
19 one were going to do this systematically is to put that
20 before the Bevatron project.

H-2

21 I think another thing to think about is along the
22 route I didn't see that in the draft EIR -- are the many
23 people on the route. This truck route will go through
24 five -- I'm sorry, it will go through six of eight council
25 districts in the City of Berkeley. And I don't know

H-2

1 whether anybody has counted the number of people that have
2 housing on those streets. And they might be crossing the
3 street during workdays and so forth. I think that should
4 be in there. Is that the end? Okay. You have my bottom
5 line. I think this whole thing should be changed and
6 repeated maybe 12, 18 months hence. Thanks.

7 MS. POWELL: Daniella Thompson.

8 MS. THOMPSON: My name is Daniella Thompson.

H-3

9 Looking at your document, I see that you recognize the
10 significance of the historical and cultural resource that
11 you are proposing to tear down. It is already on the
12 California Register of Historical Resources. It is
13 determined eligible for listing in the National Register of
14 Historic Resources, and yet you propose to go ahead, and
15 you claim that the adverse change would be significant but
16 unavoidable. And yet I don't see how you have
17 substantiated this unavoidability claim at all in this
18 document. So that's as far as resources, historical
19 resources are concerned.

H-4

20 But the other thing that I am very concerned about
21 are all of those truck trips that are going to go through
22 my neighborhood and a number of other neighborhoods for
23 years and years and years, thousands and thousands of
24 trucks carrying material -- hazardous material that is --
25 that could very well endanger a significant number of the

H-4

1 residents of Berkeley. And I don't think that it makes
2 much sense. I don't know why you don't just leave the
3 building where it is.

H-5

4 A few years ago you had Building 49, and now it is
5 in abeyance. You are not going ahead with it. It seems
6 that there is no rush at all. And I don't know why this
7 building has to come down. Thank you.

8 MS. POWELL: James Cunningham.

H-6

9 MR. CUNNINGHAM: Yes. My name is Jim Cunningham.
10 I've lived in Berkeley since 1968. And I agree with many
11 things that the two previous speakers have said, but I want
12 to the state very clearly what my personal belief is. And
13 I am speaking from the Committee to Minimize Toxic Waste.
14 That is, we do not believe that the Bevatron should be torn
15 down and carted through the streets of Berkeley. I want to
16 make that very clear. There are many reasons for it -- one
17 of the main reasons is I believe that the health and safety
18 issues have simply not been dealt with.

H-7

19 The people that were here in the meeting in March,
20 I guess it was, when it was talked about the fact that
21 there could be canvas over the trucks is ridiculous. I
22 mean, what kind of protection is that? I am just not given
23 any confidence. And that's most difficult area, as far as
24 I am concerned.

H-8

25 There are other real problems. I think the

1 financial one is enormous. I mean, there are lots of
2 things that you could do with millions of dollars, mainly
3 feed a lot of kids in the Bay Area who are very, very
4 hungry. But I guess the other thing I do need to say is
5 when I think of how my attitudes have changed over the
6 years when I would hear what the federal government or
7 someone in authority said, I would say yes, I understand
8 that.

9 I must admit that right now I don't believe a lot
10 of what I am told. And I don't believe the people are
11 lying. I believe that there is a lot of -- there is a lack
12 of understanding. And I have to be careful about what I am
13 saying because I just know too many situations where here
14 in Berkeley and at the Lab and so on, when we found out
15 five or six or seven years later, "Oh, we didn't know
16 that."

17 What I am saying is know what you are going to do
18 before you do it. I don't want to hear 20 years later
19 that, well, we shouldn't have done that. I am stating very
20 formally I do not believe the Bevatron should be torn down
21 at all. I believe it should be allowed to stay there.
22 There are many things that could be done with it which
23 would be very profitable, educationally and architecturally
24 and so on. Thank you.

25 MS. POWELL: Mark McDonald.

H-8

1 MR. MCDONALD: Good evening. My name is Mark
2 McDonald, and I live and work here in Berkeley. I've been
3 here 30 years. And I serve on the City's Peace and Justice
4 Commission which did pass a resolution advising the council
5 to recommend, which is the best they can do, to preserve
6 the Bevatron and utilize it as an education facility for
7 the benefit of the community.

8 Personally, I am opposed to the demolition of the
9 Bevatron. I am very concerned about a lot of the
10 environmental issues. I mean, what community would be
11 excited about 2000 truckloads of PCBs, radioactive dust.
12 So I feel like we are just responding normally. I am very
13 concerned that the Lab is not treating the radioactive
14 materials responsibly, the dust particulate. I have not
15 yet finished the report. I apologize, I didn't get it
16 until this week. But I am concerned that even though the
17 actual energy level of the radiation may be not that high,
18 but when they are released in particulate form,
19 particularly to be hauled in the town through tarp-covered
20 trucks, I really feel that is irresponsible.

21 These are the types of materials that are easily
22 ingested, and the real danger comes from sitting inside
23 somebody for decades, where we're talking cancers and other
24 kinds of diseases. This is not a routine demolition. This
25 is a close-knit neighborhood. The nearest house, I guess,

H-9

H-9

1 is 300 yards or so. So I am concerned that the actual
2 demolition is not protected enough. I don't see conditions
3 for windy days. This is a very unusual situation. And I
4 would like to see extra care if, in fact, it is demolished.

5 Personally I think that LBNL is really blowing it
6 in terms of -- the Bevatron, I think, is a real asset,
7 potential asset. I think it is one of those structures
8 that is most closely aligned with the identity of who LBNL
9 has been. I see LBNL being eclipsed by Lawrence Livermore
10 and Los Alamo in terms of their activities and such. I
11 just don't think young people really understand what LBNL
12 is anymore. I don't think particle the science is in the
13 news as much, and I think this facility could serve a real
14 role in terms of education of the future science students,
15 history students, and whatnot much more than many other
16 facilities at the lab.

H-10

17 I am disappointed that the facility has not been
18 used in the last ten years for this type of purpose. I
19 think that the federal government, once again, is AWOL in
20 terms of education purposes. And so now after ten years of
21 no use to just decide, okay, you know, we may need the
22 space some day, let's just knock it down, I just don't
23 think it shows the federal government being very
24 responsible here. I think it is a tremendous asset. I
25 have recently become a convert to the Bevatron, and so I

H-10

1 would like to see it preserved for posterity. Thank you.

2 MS. POWELL: Terri Sal.

3 MS. SAL: Well, I too agree with all of the
4 previous speakers that I am -- am concerned about the idea
5 of demolishing the Bevatron. I think this plan is void of
6 common sense. And it's a little alarming coming from the

H-11

7 intelligence community here. But -- so the concerns have
8 been stated. I have very little confidence that the trucks
9 can go through Berkeley without contaminating our
10 neighborhoods and endangering us all. There is going to be
11 a lot of trucks. There is a lot of traffic. There is no
12 guarantees against accidents. The dust and everything has
13 been a concern of mine.

14 You know, the other question is appropriate
15 disposal. They will be appropriately disposed. Well, what
16 generations in the future are we going to put that on. I
17 don't really think we can just truck our problems out, and,
18 has been stated earlier, I think we are going to create a
19 lot more dangers at least for many generations here if we
20 destroy it as opposed to trying to -- if we demolish it and
21 spread the debris around.

H-12

22 So I think it would be wiser to let it stay, not to
23 disrupt what's been created. I fear that this is sort of a
24 move somehow to build something there in the future. And
25 that must be the motivation of why it is being proposed to

H-13

H-13

1 be torn down for so much money at, obviously, a time when
2 resources can be put in better places. I am not confident
3 what would be built there in the future would be something
4 that our community would want or would be any safer than
5 the Bevatron as it is now. So I propose this really be
6 looked at more closely and we come up with a plan that
7 doesn't involve demolishing it. Thank you.

8 MS. POWELL: L.A. Wood.

H-14

9 MR. WOOD: Actually, the people I want to talk to
10 are out here, and that's the Lab people. And I went down
11 to the Bevatron and had an opportunity to look at a
12 distance. I wasn't allowed to go inside. I think when you
13 go down and you recognize that it is not an irregular
14 building like it is being talked about, but it is in the
15 style and the form of the Cyclotron at the top of the hill.
16 You have to go down and look. It's big science. I've been
17 reading about it because I petitioned the Landmark
18 Commission last month to initiate it onto a list to be
19 landmarked. It is a tremendous asset for the Lab. As
20 other people have talked about, is that since Manhattan,
21 Bevatron and the Bevalac, they have been the Lab. It is a
22 user facility.

23 I found a wonderful article in the '80s talking
24 about this, talking in the advent in '62 of the Tritium
25 Lab. This is a useful facility, and it always has been.

1 That building is probably more recognizable to people
2 around the world than it is to people in Berkeley. And
3 both of those buildings up there, you don't need to
4 recognize that. I am extremely disappointed that we would
5 want to knock it down. I want to formally notice the Lab,
6 since we are in this process, that this building has a
7 public hearing on December 5th, and I will be filing the
8 petition to landmark the building with the City of
9 Berkeley, which has quite the right to do that.

10 I think that if the Lab doesn't recognize the value
11 of the building, then the city of Berkeley needs to move
12 forward and its citizens -- that is my resource as much as
13 it is the Lab's. And we need to recognize it. What an
14 **H-14** incredible building. What you have is you have a big
15 circular building 180 feet, they say, across. It's an
16 incredible structure. It don't think it would ever fall
17 down. If you read about how they built that structure,
18 from what I could see from inside, the trusses inside,
19 incredible. What you have adjacent to and adjoining it are
20 buttressed buildings which often happen to huge central
21 buildings.

22 This building would be a shame to lose, a beautiful
23 clear story that wraps most of the building. You look at
24 the large bays. You realize that the skeleton of this
25 building is incredible, nothing like it in the East Bay.

1 This was the largest man-made piece of equipment in 1955.
2 It needed a shed big enough to handle it, and this is an
3 impressive structure. We would be remiss to get rid of
4 this. When you stand down and you recognize its setting,
5 its setting is in the shadow of the Cyclotron. And it is
6 that part that has defined the Lab as a user facility and
7 kept the Lab propped. Up in the '80s there was a question
8 as to what was even going to exist. And I believe it was
9 activity of the Bevatron in the '70s and '80s that
10 redirected and kept the mission of the Lab, which is being
11 a user facility.

H-14

12 I had looked at some film today of the media up
13 there, and something the Lab had never seen, shot in '89.
14 Just incredible when you think about the science and what
15 has gone on up there. I hope I have another comment so I
16 can talk about the environmental concern, but I hope you
17 would not knock it down and honor it as a landmark it is.
18 Thank you.

19 MS. POWELL: Brian Woodcock.

20 MR. WOODCOCK: I don't really have anything
21 original to say, but I would like to second a lot of what
22 other speakers previously said. And my comments are
23 basically just in two arenas that I think containment in
24 place of whatever is up there is a whole lot safer than
25 trying to truck it out through downtown Berkeley and off

H-15

H-15

1 anywhere.

H-16

2 And, number two, I think that Berkeley is a very
3 historically conscious city with education being very
4 important. And that building is probably the historically
5 significant building in Berkeley and maybe in the Bay Area.
6 And it, I think, would be foolhardy to tear it down. Thank
7 you.

8 MS. POWELL: Are there any other speakers who would
9 like to come forward? Or are there speakers who would like
10 to add to their comments?

11 MR. WOOD: I certainly would.

12 MS. POWELL: I think we can be a little bit free in
13 our latitude with timing.

H-17

14 MR. WOOD: I just want to say, I sit on the
15 Environmental Commission. I am not speaking as a
16 commissioner, but over the last decade or so I have been
17 following the Lab. As a matter of fact, in 1987 -- I went
18 digging through my papers today looking for some of my
19 comments. My comments to having the landmark is not the
20 first time that I have addressed concerns about the
21 Bevatron. In 1997 I addressed when the Lab was going
22 through a closure process called Pathways to Closure. I
23 know the Lab people know that. Paper closure, basically
24 they say the Bevatron wasn't on the table to be looked at.
25 And I was disappointed because at that time I was concerned

1 about the landmarking of it. And I am concerned about the
2 trucking of the material too. My concerns may be a little
3 closer than most of the other people. I live directly on
4 the path probably 75 yards from probably where the truck
5 will turn and make its turn coming down the hill.

6 What you end up with is a dust pathway, if you've
7 ever seen a construction site. And I know that the City
8 isn't diligent in keeping up with its own street sweeping.
9 I know that what we'll find -- we'll find over time there
10 will be a dirt pathway up to the building that we will be
11 able to follow. And it's about that fugitive dust that
12 people are talking about. We're more concerned about that
13 today because I think environmentally, for the city of
14 Berkeley, it's not our groundwaters that are threatening
15 us, it is not our contaminated soil that is threatening us,
16 but it is the air quality in Berkeley and the particular
17 dates. It's a serious concern.

H-17

18 The city of Berkeley just instituted a check in
19 school for children which is kind of progressive for a
20 city. It is not good enough when I think the City needs to
21 be able to stand back and say, "Let's avoid the activities
22 that create the problems so that we don't have to screen
23 children in school."

24 And I think this construction, along with all of
25 the other constructions, has been recognized as

1 construction is too much. I don't -- what I don't like is
2 the mix. I don't know what mixed waste is. And I am
3 concerned about anything that would bring radiation closer
4 to me. I try not to even go up to the Lab because I
5 recognize that it is an area that has radiation
6 contamination. And I don't like the idea of dragging it
7 down.

H-17

8 Historically, also, I think you need to recognize
9 that I am of a generation that was born after Manhattan,
10 and when the Bevatron was built, you know, I was in
11 preschool. And so it's not something -- it's a legacy from
12 another generation. And I think that the Lab needs to
13 recognize that for some of us to come up, as I said, we are
14 responding normally and that we recognize the seriousness
15 of that.

16 And I think the solution needs to be tailored to
17 us. And I am hoping that you will recognize the need to
18 clear out part of the building, save some of the historical
19 elements in it, and take that building and utilize the
20 central structure. If you read your report, we already use
21 the offices adjacent to it. They are seismically okay. So
22 the Lab needs offices. So in a sense you are going to be
23 using those until you tear it down anyway.

H-18

24 So here is a building with some degree of utility
25 that could have in the future in less time than five, six,

H-18

1 ten, twelve, fifteen years from now could have practical
2 use for the Lab. And I love the idea of education, but I
3 would also yield to the Lab in reuse because we know when
4 you reuse the property, you know, in a similar fashion, you
5 don't have to clean it up to the standard you might if you
6 created an educational institution. So I am in favor of
7 reusing it like they did, the Cyclotron in their
8 operations, but certainly as the symbol it is. You know,
9 as I said, it is what makes the Lab the Lab.

10 MS. POWELL: Would you like to speak, another
11 speaker? Would anyone else like to speak?

H-19

12 MR. MCDONALD: If I might add another minute or so?
13 Thank you for the opportunity to add to my comments. I am
14 not sure who I am talking to. I just wanted to say that my
15 commission was convinced by the educational possibilities
16 of this facility. When I was first studying science
17 physics I saw pictures with little round things moving
18 around each other. And I really think that an older
19 science class has the potential to be really inspired by
20 this type of facility. You know, it would be, "Whoa, kid,
21 you get to -- you spend the time with the science and the
22 physics, this is the kind of cool facility you can hang out
23 in." And that was never apparent to me when I was studying
24 it. So that was part of why I started to be impressed with
25 the facility.

H-19

1 So I really do think that not enough thought has
2 been given to the potential for this as an educational
3 facility, particularly for older kids. There is the
4 Lawrence Hall of Science for the younger kids. There is
5 the Exploratorium, but I just don't see it in the Bay Area
6 for the older kids. So I think that is a possible use that
7 wasn't really considered.

H-20

8 The other thing I just wanted to address on
9 principle in the city of Berkeley and a lot of the
10 environmentally conscious people here support the principle
11 of decay in place, which was mentioned by our earlier
12 speaker, I want to explain what that is. In all of the
13 decades that we've created all of this toxic waste, the
14 idea has been to just when you are done with it or need to
15 move it, just take it to some other place which has been
16 designated as a place to store toxic waste and bring it
17 there.

18 The problem is that we've been finding now that
19 those communities are not wanting to receive it anymore.
20 It has not being contained adequately. The communities
21 there are now signalling us they don't want to do that
22 unless it is absolutely necessary. What decay in place is
23 is the idea that if you have a situation where there is
24 toxic materials, if you need to move it, then you move it.
25 But if it is a possibility to leave it in place where it is

H-20

1 not a threat or a hazard -- and that's an unusual
2 situation, and I submit that the Bevatron is one of these
3 situations where it does not represent a threat the way it
4 is; whereas by demolishing it and moving it, then we are
5 adding to the toxic load, on principle we support the idea
6 when it is possible to leave these types of materials
7 locked up in place. Thank you very much.

8 MS. POWELL: Charlene Woodcock?

H-21

9 MS. WOODCOCK: I want to second what's been said by
10 most of the speakers. It seems to me deeply irresponsible
11 to demolish a building that has toxic materials in it,
12 radioactive materials in it. I see no reason, no excuse.
13 There is good historical reason to maintain it, and there
14 is certainly very strong environmental reasons or many
15 strong environmental reasons to leave these materials in
16 place to stabilize the building and not try to make some
17 other use of that space and subject the residents of
18 Berkeley to many thousands of truckloads through their
19 neighborhood, damaging streets, and inevitably --
20 inevitably there would be at least one accident. You know
21 if you listen to the radio every morning there are
22 accidents going on all over the city and the freeways that
23 these trucks would go through. So I just can't see any
24 justification for it. Thank you.

25 ~~MR. KEVIN~~ Ms Powell: This concludes the public hearing. Do

1 you have a comment?

2 MR. PARKS: I turned in a question, and something
3 came up from my memory. My name is Ken Parks. I'm with
4 the Berkeley Gray Panthers. I was one of the people that
5 wrote the City ordinance for the City of Oakland on
6 transportation of radioactive material through the streets.
7 Have you gone to the cities that have it? Richmond has it,
8 Oakland has it, and transportation of radioactive materials
9 through the streets, you cannot -- the Port cannot -- of
10 Oakland and Richmond handle radioactive material except for
11 medical purposes. And that's the only one there in the
12 ordinance in Oakland. So I was wondering, have you
13 contacted these cities that have a nuclear-free zone or
14 radioactive ordinances? There is a number of cities in the
15 state of California. If you are going down to (inaudible)
16 that place there. I was wondering if you contacted these
17 cities to let them know that they are going to be hauling
18 radioactive material through the streets.

19 MS. POWELL: Thank you. Is there any other speaker
20 who would like to come forward? I think this then
21 concludes our public hearing on the draft EIR for the
22 Building 51 and Bevatron demolition. Thank you very much.
23 Good evening.

24 (The hearing adjourned at 7:27 p.m.)

25 --o0o--

H-22

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REPORTER'S CERTIFICATE

I, Joanna Broadwell, Certified Shorthand Reporter No. 10959 in and for the State of California, hereby certify that the foregoing is a full, true and correct transcript of the proceedings to the best of my ability.

Date: _____

Joanna Broadwell CSR # 10959

April 15, 2005.

Daniel Kevin

Environmental Planning Dept.
LBNL

One Cyclotron Rd. MS 90K0198

Berkeley, CA. 94720.

Re: Bevatron Demolition

Dear Mr. Kevin,

It is outrageous that the Lab is tying the EIR for Bevatron Demolition off of an 18 year old Long Range Development Plan. And even more outrageous that the University of California, the current manager of the Lab is allowing this. It is very difficult for the public to exercise its right to know when it has to attempt to locate and assemble a 1987 EIR, a 1992 amendment and then juggle these with the Bevatron EIR next due. The big question is why has the continuation of the ~~LRDP~~ LRDP started in 2000 been delayed? The 1987 EIR, as amended, does not cover the Molecular Foundry, the decommissioning of the National Tritium Facility, or the new office building at Westgate. Since no EIR's were done for the Molecular Foundry and the NTF decommissioning, will the cumulative effects of all these projects be properly addressed? Consider the radioactive hazardous dust from Bevatron demolition mixed together with unfilterable nanoparticles, viruses and bacteria from the Molecular Foundry. Unfortunately, I live near this soup to be. However, I am especially concerned about those students and other residents who live close to the demolition site and the route for the thousands of

(page 1 of 2 pages)

GB-1

GB-2

GB-3

Re: Bevatron Demolition

trucks that will transport the Bevatron debris - some radioactive, some with asbestos, lead, mercury, P.C.B's, etc. Some of the debris contains Cobalt 60, and some Cesium 137. We already know X-rays are dangerous. That's why they finally stopped X-raying pregnant women. Cobalt 60, now used on the Pacific Coast docks to inspect cargo containers, has 59 times the energy intensity of an X-ray. Cobalt 60 emits gamma rays. At the docks the gamma rays go from the source two plus feet from the container, pass through the 8' to 10' wide container and continue two plus feet to the detector on the other side. That's a minimum of 12'-14' or long enough that gamma rays from Cobalt 60 contaminated Bevatron debris in a truck in the right hand lane of the street (Hearst, Oxford, University Ave.) could expose people at a bus stop, on the sidewalk or in stores abutting the sidewalk. Also the gamma rays would travel left through two lanes of traffic. At a stop sign or in stalled traffic everyone surrounding the truck would get an unnecessary radiation dose. In case of accident, unretrieved debris and dust would contaminate the area for years if not decades.

Since the Bevatron is eligible for listing in the National Register of Historic Places, let's do that and allow the Bevatron and its contamination to remain on site and the radioactivity to continue to decay in place as it has been doing since its inception 50 years ago.

Sincerely,

Gene Bernardi
9 Redden Ct. Berkeley, CA

(page 2 of 2 pages)

blue

po box 4756

berkeley ca 94704

15 April 2005

Daniel Kevin
LBNL NEPA/CEQA Program
Lawrence Berkeley National Laboratory 90K0198
One Cyclotron Road
Berkeley CA 94720

Re: Building 51 and Bevatron Demolition NOP/DEIR

Dear Mr Kevin:

Berkeleyans for a Livable University Environment (BLUE) is an informal network of neighborhood stewards on the perimeter of University of California properties in Berkeley and along major transportation corridors which serve the local UC community.

Consequently, we are always keen to anticipate to the greatest extent feasible how livability in our neighborhoods is likely to be impacted by large UC projects. The one described in the Notice Preparation for a Draft Environmental Impact Report on Building 51 and Bevatron Demolition is no exception.

We have several concerns with the Bevatron NOP/DEIR Environmental Checklist-Initial Study issued on 15 March:

- The deadline for responses—16 April—is remarkably short for a project of this scope. Why not at least extend the comment period through the entire month of April? That might allow one or more of Berkeley's many citizen commissions to consider the Bevatron project in public and improve the quality of responses you are likely to receive.

JMS-1

- JMS-2
- The project DEIR will incorporate mitigation measures from an 18-year-old LRDP (as amended). Why should the Bevatron Demolition project not be covered by mitigation measures associated with LBNL's new LRDP? After all, the original NOP for the "2002 LRDP EIR" first appeared on 2 October 2000. It was superseded by a revised NOP for a "2004 LRDP EIR" issued three years later on 28 October 2003. At the time, that long-range development plan was expected to reach the UC Regents for consideration in August 2004. However, page 6 of the Checklist tells us that the new LRDP DEIR "will be available for public review later in 2005"—presumably *after* the Bevatron DEIR has slipped through the pipeline.

- JMS-3
- Page 3 of the Checklist talks about "several thousand one-way truck trips" which the Bevatron Demolition project is expected to generate over its "four-to-six-year term". We hope the DEIR will be much more specific about the number and frequency of truck trips over the entire project. By way of comparison with two recent large Northeast Quadrant projects (cf, NEQSS DEIR page 3.6-51), the estimated excavation volumes were 6733 and 4400 truck loads at the Stanley Hall and Davis Hall North sites respectively. These figures assumed 15 cubic yards of material per truck and two truck trips per load. They did not include demolition of the old structures.

- JMS-4
- Our experience with UC projects suggests that the DEIRs which precede them tend to minimize actual impacts. For instance, the NEQSS DEIR anticipated that excavation at the Davis Hall North site would take 14 weeks. Begun late last October, excavation for that project continues to this day. That's 20+ weeks. Likewise, UC's DEIRs often underestimate or trivialize cumulative traffic impacts. For example, do you expect the Bevatron Demolition project to coincide with construction of LBNL's Building 49?

JMS-5

Specifically, at key intersections along the entire length of LBNL's proposed truck route along Berkeley streets, how will traffic impacts from the Bevatron Demolition project overlap and exacerbate those of other UC-related projects envisioned during the four-to-six-year project horizon?

- JMS-6
- In addition, we would like the DEIR to analyze thoroughly any personal safety and health risks that the added truck traffic might pose for pedestrians and bicyclists who use the Hearst, Oxford, and University Avenue corridors. The same goes for residents. Does LBNL have any plans to gather baseline “window sill” data to establish a baseline for the deposition of toxic or radioactive materials along the proposed route? If not, why not?
- JMS-7
- A parallel consideration is the air-quality degradation associated with UC’s truck convoys. Why under the Air Quality topic area do we see no mention of diesel particulates? Page 9 of the Checklist discusses “prevailing wind directions measured on site”. What about prevailing winds along the length of LBNL’s proposed truck route along Berkeley streets?
- JMS-8
- Lastly, we note that the Checklist only discusses on-site noise. What about existing and anticipated noise levels along the proposed truck route? Does LBNL have any plans to gather baseline data here too? If not, why not?

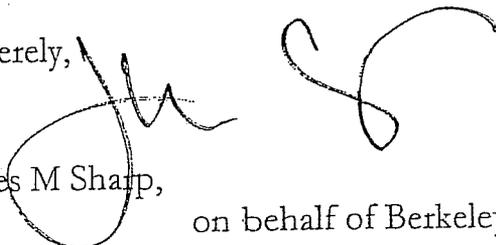
It is easy to see why LBNL management and the US Department of Energy may be eager to demolish and remove a partially radioactive structure which occupies four acres of prime space.

JMS-9

What is more difficult is imagining how Berkeley citizens—especially those who already cope with rising pulsations of UC commuter and construction traffic in their midst—will understand how an intensified six-year flow of thousands of big trucks, some laden with contaminated soil and toxic rubble, improves livability in their communities.

Please keep us informed. Good luck with the DEIR.

Sincerely,


James M Sharp,

on behalf of Berkeleyans for a Livable University Environment

10/24/05

Owen Chamberlain
 Santa M. Pugh Chamberlain

Council Meeting
 Oct. 25, 2005

(510) 524-4654

885 Santa Barbara Rd.
 Berkeley, Ca. 94707-2018

Ad - ACENDA ITEM 22 -
BEVATRON at LBNL. KEEP IT

SPC-1

This is to strongly request the Council to make the conversion of the Bevatron to a historical & educational resource. It is to endorse the position taken by the Peace & Justice Commission.

This note is being written for Owen Chamberlain. Along with Emilio Segrè, Clyde Wiegand & others, O. C. was involved in the discovery of the ANTI PROTON at the Bevatron. This experiment will be discussed in a 50 anniversary symposium at LBNL this Friday, Oct 28 & this Saturday, Oct 29, with O. C. as Hon. Chair.

Owen C. is severely disabled & cannot sign for himself.

Santa M. Pugh Chamberlain
 510-524-4654 (wife)

Renowned Physicist Passes Away

by **Daniel Yu**
Contributing Writer

UC Berkeley professor emeritus of physics Owen Chamberlain, who won a Nobel Prize for discovering the anti-proton, died Feb. 28 from complications of Parkinson's disease. He was 85.

Chamberlain was part of a group of researchers who used the Bevatron, a powerful particle accelerator, to create the first anti-proton—the antimatter, negatively-charged equivalent of a proton—at what is now the Lawrence Berkeley National Laboratory in 1955.



**OWEN
CHAMBERLAIN**

In 1959, Chamberlain and his colleague UC Berkeley professor Emilio Segre won the Nobel Prize for this discovery.

"The discovery opened up a whole new field of physics and expanded our understanding of particle physics," said Chamberlain's colleague and former student Herbert Steiner, a professor of physics at UC Berkeley, in a statement released earlier this week.

While teaching on campus, Chamberlain was interactive with his students and had broad interests in his field, according to his colleagues in the UC Berkeley physics department.

"He was a very good teacher in the classroom and when interacting with graduate students," Steiner said. "We called 'how he explained things 'Chamberlainism' because they were novel, unique, interesting."

Even after retiring, Chamberlain still attended the weekly physics colloquia on campus even while struggling with his deteriorating health, UC Berkeley physics professor Marvin Cohen said.

"He must have had a real commitment to physics to push himself to see the colloquia, and it was inspiring," Cohen said.

Born in 1920, Chamberlain, a San Francisco native, went on to earn his undergraduate degree from Dartmouth College.

He attended UC Berkeley for his graduate work in physics in 1942, but left in the same year to work on the Manhattan Project, developing the atomic bomb used during World War II.

After earning a doctoral degree from the University of Chicago under renowned researcher Enrico Fermi, Chamberlain returned to join the UC Berkeley physics faculty in 1948. He was appointed professor of physics in 1958.

When Chamberlain retired from active teaching at UC Berkeley in 1989, he received the school's highest honor, the Berkeley Citation.

Throughout his tenure at UC Berkeley, Chamberlain was active not only in his department, but also in campus political movements.

He supported the Free Speech Movement, opposed the Vietnam War and was vocal about race relations.

Chamberlain also denounced the UC Regents for firing former UC President Clark Kerr because of his lenience towards student protestors in 1967.

Chamberlain was the chairman of the Berkeley branch of Federation of American Scientists, a lobby group focusing on the dangers of nuclear arms. Throughout much of his life, he actively campaigned to stop the proliferation of nuclear weapons.

Chamberlain is survived by his wife Senta Pugh-Chamberlain and two step-daughters Mary Pugh and Anne Pugh, and four children from his first marriage to Beatrice Babette Copper—Lynne Guenther, Karen, Darol and Pia Chamberlain.

Contact Daniel Yu at
dju@dailycal.org.

Berkeley, California

Thursday, March 2, 2006

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March 3, 2006

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Volume 1, Number 209

8 Friday, March 3, 2006 Daily News

NEWS

Nobel-winning physicist Chamberlain, 85, dies

BY MATT KRUPNICK
KNIGHT RIDDER

Nobel Prize winner Owen Chamberlain, a longtime University of California at Berkeley physics professor, died Tuesday at his Berkeley home. He was 85.

Chamberlain won the Nobel Prize in physics, along with colleague Emilio Segre, in 1959 for the pair's discovery of the antiproton, the negatively charged mirror of the proton.

He worked on the Manhattan Project, the federal program that developed the first atomic bomb, and was present at the bomb's first test in New Mexico in 1945. Chamberlain later advocated strict arms control measures, said longtime UC

Berkeley colleague Herbert Steiner.

"There was a different mindset" during the bomb's development, said Steiner, a retired physics professor. "There was more of a feeling that this was just something we had to do, because if we didn't then Hitler would get it first. It was a way of saving the world from evil."

Chamberlain, who retired in 1989, also protested the war in Vietnam and worked to increase the number of minority students on the Berkeley campus. In 2003, he signed a letter with 40 other Nobel laureates protesting the war in Iraq.

"He had a real social conscience that he translated into action," Steiner said.

Like many on the Berkeley campus, Chamberlain was prominent in both activism and scholarship. He and Segre, who died while walking near his Lafayette home in 1989, beat out several competing researchers to dis-

cover the antiproton, which proved that all particles have twins of an opposite polarity.

Chamberlain, who was born in San Francisco, attended Dartmouth College, UC Berkeley and the University of Chicago, where he studied under Nobel-winning physicist Enrico Fermi.

In his autobiography, Segre referred to Chamberlain as "a student who amused himself in finding flaws in the lectures."

Chamberlain's intelligence went far beyond book smarts, said Steiner, who recalled how Chamberlain would work out complicated problems during lunch.

"We'd be stumped, and almost invariably, Owen would have the answer," he said. "These were explanations that were not from the textbook. We called them Chamberlainisms, because they were fairly unique."

No services have been scheduled.

OWEN CHAMBERLAIN

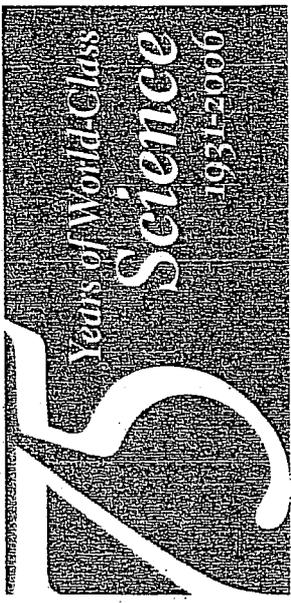
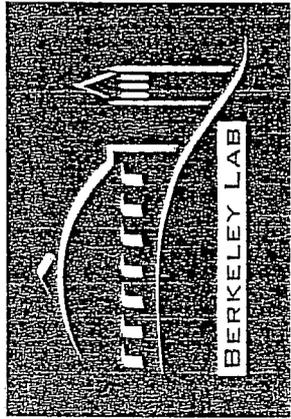
Born: July 10, 1920, in San Francisco.

Died: Tuesday, in Berkeley.
Survivors: His wife, Senta Pugh-Chamberlain of Berkeley, four children by his first wife, Beatrice; Babette Cooper, who died in 1988; daughters Karen Chamberlain of Tampa, Fla.; Lynne Guenther of Ithaca, N.Y.; and Pia Chamberlain of San Jose; and son Darol of Ithaca, N.Y.

He also is survived by stepdaughters Mary Pugh of Toronto, Canada, and Anne Pugh of Oakland. Another wife, June Steingart Greenfield, died in 1991.



CHAMBERLAIN



the VIEW

MARCH 17, 2006

VOL. 4, NO. 3

BERKELEY LAB'S MONTHLY NEWS PUBLICATION

OWEN CHAMBERLAIN: NOBEL LAUREATE AND HUMANITARIAN

BY LYNN YARRIS

In his youth he helped create the most fearsome weapon of war the world had ever seen. In his later years, he worked equally hard to banish such weapons from the face of the globe. He won science's highest prize early in his career, but his quest to push the boundaries of scientific knowledge would continue unabated for decades to come, as would his determination to speak out for causes in which he believed. Owen Chamberlain, Nobel laureate, professor emeritus of physics at UC Berkeley, member of Ernest O. Lawrence's legendary "Rad Lab" team, and one of Berkeley Lab's greatest scientists, has died. He passed away quietly in his home in Berkeley on Feb. 28, following a

long struggle with Parkinson's Disease. He was 85.

The tall, thin, avuncular and witty Chamberlain is most remembered for his role in the discovery of the antiproton in 1955, a role for which he shared the 1959 Nobel Prize in physics with his Rad Lab and UC Berkeley colleague Emilio Segrè, who died in 1989. The discovery of the antiproton, the mirror image counterpart to the proton in ordinary matter, was made possible through the combination of the Bevatron accelerator, the world's most powerful at that time, and a unique detector, designed by Chamberlain and his colleague, Clyde Wiegand, that was set off only by particles moving at the speed predicted for antiprotons. Chamberlain was born in San

Francisco on July 10, 1920. His father was W. Edward Chamberlain, a prominent radiologist who had a strong interest in particle physics. His mother was Genevieve Lucinda Owen. His family moved to Philadelphia in 1930, where Chamberlain attended public school. After obtaining a bachelor's degree from Dartmouth College in 1941, he entered graduate school at UC Berkeley, where he first met Segrè, a rising star in nuclear physics who would have a strong influence on his career.

Said Segrè in his autobiography "In one of my optics courses there was a student who amused himself by finding flaws in my lectures. His objections, always polite, were often well taken and showed a critical

Continued on page



Chamberlain

Nobel Laureate Chamberlain Dies

continued from page 1

and alert mind. I appreciated the young man who obviously was interested in the course, and used his head, and I made friends with him. He was Owen Chamberlain."

Chamberlain's studies at Berkeley were interrupted when the United States entered World War II. In early 1942, at the prompting of Lawrence, he joined the Manhattan Project, the U.S. government's secret effort to build an atomic bomb. Working as an assistant to Segrè, first in Berkeley and then in Los Alamos, NM, he investigated nuclear cross sections for intermediate-energy neutrons and the spontaneous fission of heavy elements.

"It was very hard for my draft board to believe that at the age of 23, I was indispensable to the war effort," Chamberlain once told an interviewer. "They tried to draft me three times; each time I was saved by a presidential directive."

Chamberlain was a participant in Trinity, the first atomic bomb test, held in Alamogordo, NM, in 1945. Afterwards, he gathered bits of glass, created from desert sand by the heat of the blast, and mailed samples to several noted politicians in Washington, D.C., with the warning message: "Look what you

can do to mankind!"

After the war, Chamberlain resumed his graduate work at the University of Chicago. His mentor there was the great Italian physicist and Nobel Laureate Enrico Fermi, who'd also been Segrè's mentor. He was awarded his Ph.D. in physics in 1948 and immediately returned to UC Berkeley, where he accepted a teaching position, (he would become a full professor in 1958) and was reunited with Segrè at the Rad Lab.

Chamberlain, Segrè and Wiegand made use of the Rad Lab's powerful particle accelerators — called atom smashers at the time — to undertake an extensive series of experiments on the interactions between protons and the polarization of smashed atomic nuclei. In 1954, Lawrence commissioned the Bevatron accelerator, a machine that was built to go after the antiproton whose existence had been predicted in 1928. Two teams were assembled to find the elusive particle. One team was led by Segrè and Chamberlain and included Wiegand and Thomas Ypsilantis.

The antiproton experiments of Segrè and Chamberlain and their collaborators began the first week of August in 1955. On September 21, the future Nobel laureates and

their team got their first evidence of the antiproton based on measurements of particle momentum and velocity. The paper announcing their historic discovery was published in the Nov. 1, 1955 issue of *Physical Review Letters*.

Having won the Nobel Prize at the relatively young age of 39, Chamberlain would remain a highly productive scientist on the frontiers of particle physics for a great many years afterwards. In the 1960s, he led a 20-year study of the relationships between nuclear forces and the spin of protons and neutrons. Prior to his official retirement in 1989, he was an active member of the group of Berkeley Lab scientists, led by David Nygren, who developed the Time Projection Chamber, or TPC, a particle detector that has become the workhorse of today's high energy and nuclear physics research.

Herbert Steiner, a long-time collaborator and former student of Chamberlain, remembers him as a gifted teacher who was called Owen by his students, and whose unique explanations for physical phenomena became known as "Chamberlainisms."

Said Steiner, "I suspect Owen must often have wondered what

was wrong with the rest of us when we didn't immediately come up with his obvious solutions to problems by ourselves."

In addition to his scientific efforts, Chamberlain also became an outspoken activist for nuclear arms control and other issues of social concern. In the 1960s, he was a supporter of the Free Speech Movement and a strong advocate for increased minority recruitment and enrollment at UC Berkeley. He spoke out against the repression of scientists in the former Soviet Union, demonstrated against the Vietnam War, and was a founder of the nuclear freeze movement of the early 1980s.

Chamberlain is survived by his wife, Senta Pugh-Chamberlain (née Gaiser) of Berkeley, and four children by his first wife, Beatrice Babette Copper, who died in 1981 — daughters Karen Chamberlain of Tampa, FL.; Lynne Guenther of Ithaca, NY; Pia Chamberlain of San Jose; and son Darol of Ithaca, NY. He also is survived by step-daughters Mary Pugh of Toronto, Canada, and Anne Pugh of Oakland. A second wife, June Steingart Greenfield, died in 1991.

Memorial arrangements are pending.



November 22, 2005

Daniel Kevin
Lawrence Berkeley National Laboratory
Environmental Planning Group
One Cyclotron Road, MS 69R0201
Berkeley, CA 94720

Re: Draft Environmental Impact Report for the Demolition of Building 51 and the
Bevatron, Berkeley

Dear Mr. Kevin:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report (EIR) for the Demolition of Building 51 and the Bevatron located in Berkeley. EBMUD provided comments on water and wastewater service for the Notice of Preparation of the Draft EIR on April 4, 2005 which has been addressed. EBMUD has no additional comments regarding environmental issues for this project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

A handwritten signature in black ink, appearing to read 'W.R. Kirkpatrick', with a long horizontal flourish extending to the right.

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:NJR:sb
sb05_323.doc

December 5, 2005

Daniel Kevin
Environmental Planning Group
Lawrence Berkeley National Laboratory
One Cyclotron Road, MS 69R0201
Berkeley, CA 94720
djkevin@lbl.gov

I would like to say a few words in support of historic preservation of the Bevatron facility. I have examined the environmental impact report prepared by the Laboratory. While I appreciate the preferred alternative to demolish the facility to support of future programs, I believe that the preservation alternative deserves further consideration. I am strongly in support of nominating the facility for inclusion in the National Register of Historic Places.

As a liberal arts student at Berkeley during the late-70s, I was aware of the work being done 'on the hill'. In fact, many years before, I had already heard of the accomplishments of Dr Lawrence, the Lab and the Berkeley cyclotrons. While it was unlikely that I would ever become a physicist or a chemist, I have, to this day, a deep appreciation and interest in the sciences. In 1997, I was fortunate to be able to view the already decommissioned Bevatron during an LBL open house. One could only admire it from a viewing gallery rather than walk the floor and experience the system up close. Previously, outside of photographs, I'd only seen the early brass prototypes and some assorted salvaged components on display at the Lawrence Hall of Science. Incidentally, I did see the 88" cyclotron on the same trip and did learn many interesting things. For these opportunities, I thank LBL and its staff.

LAI-1

It is increasingly difficult to preserve our scientific, engineering and industrial history. This undertaking would be no exception. I am appreciative effort taken to compile the collection of photographs and the narrative which was submitted to the Historic American Engineering Record. I have examined with interest the package made available on their web site. Photographic and documentary records, however, can tell only part of the story. There is nothing like seeing artifacts in their natural setting. It would be difficult to fully appreciate the magnitude of the effort in going to the Moon without experiencing the Apollo flight hardware (including the Saturn V). Preserving this hardware was not a small undertaking but it was accomplished nevertheless. The EIR already recounts the four Nobel Prizes and lists many of the scientists who have utilized the facility to make other significant contributions to the field, so these points need not be belabored. The distinguished heritage of the Bevatron should be used as an opportunity to seek resources for its protection and preservation.

The Bevatron helps tell the story of the UC/UCRL/LBL contribution early high-energy particle physics as well as later work in heavy-ion and medical research during the Bevalac years. It recalls a time when the Laboratory was a preeminent force in such

research before the requirements for these machines made continuation of much of this work in Berkeley impractical. I am not aware that any of the other Berkeley cyclotrons that has been preserved essentially intact. I believe that it will be increasingly difficult and unlikely that preservation will be viable for modern day accelerators such as those at SLAC or FNAL even if their accomplishments match or exceed those of the Bevatron. In this respect, preserving key examples of such earlier machines is imperative. The newer 88" cyclotron or the Advanced Light Source may someday be candidates to tell part of this story. Their focus appears have turned from basic science to applied science. The trend appears to have shifted to materials sciences rather than fundamental questions in particle and nuclear physics. While important research is conducted; only time will tell if they will be considered important enough to be able to preserve.

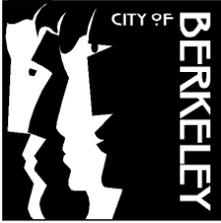
If the Bevatron is the last 'largely complete' accelerator of the Lawrence-era, it may provide one of the last opportunities to save an important piece of the 20th century's scientific and engineering history. If true, this is an opportunity we should not miss. An immediate goal should be preservation and protection of the existing assets by the UC, LBL, DOE, NPS or some other agency (or group of agencies). Longer-term restoration of the facility and its equipment should be the goal. A way should be found to maximize the public's opportunity to take part in this experience. If it is determined that preserving the entire facility is not feasible, a careful examination should be undertaken as to whether any components of significance could be saved which would convey the character of the work done there.

As there is no current plan (or current need) by the Laboratory to otherwise utilize the site, perhaps it is prudent to preserve our option rather than act with haste. Once gone, the consequence is irreversible. It would be nice if the funding allocated to its demolition could be used for it's preservation but this is probably not the reality of the fiscal process.

I am certainly not as well versed as members of the laboratory community as to the true state of the Bevatron and the associated facility. I do believe, however, that a more serious examination of the merits and practicality of historical preservation should be undertaken.

Eric Lai
34886 Seal Rock Terrace
Fremont CA, 94555
elai@appsig.com

LAI-1



Office of the City Manager

December 7, 2005

Mr. Daniel Kevin
LBNL NEPA/CEQA Program
Lawrence Berkeley National Laboratory, 90K0198
One Cyclotron Road
Berkeley, CA 94720

Re: Comments on Draft Environmental Impact Report for Demolition of LBNL Building 51/Bevatron

Dear Mr. Kevin:

This letter is the City of Berkeley's response to the Draft Environmental Impact Report (EIR) for the demolition of Building 51 and the Bevatron at the Lawrence Berkeley National Laboratory (LBNL).

On March 11, 2003, the Berkeley City Council supported decommissioning, deconstruction, and removal of the Bevatron in a manner acceptable to the public, requested that an EIR be prepared, and requested that LBNL develop a long-term plan for future uses for the site. The City is pleased that LBNL agreed with our conclusion that a full EIR would be needed to analyze the potential significant environmental impacts of this project. We have some concerns, however, about the adequacy of the Draft EIR that LBNL issued on October 21, 2005.

The DEIR is "tiered" off three Environmental Impact Reports prepared between 1987 and 1997 that comprise the EIR for the LBNL's 1987 Long Range Development Plan (LRDP) as amended. The DEIR states that it relies on the 1987 EIR in several areas including environmental setting, overall growth-related issues, long-term cumulative impacts, and mitigation measures applicable to this project. The CEQA Guidelines (Sec. 15168 (d)) specify the circumstances under which a previously certified EIR can be incorporated by reference to deal with these and other factors. Because of significant impacts associated with implementation of the UC Berkeley 2020 Long Range Development Plan, which UC approved after adoption of the amended 1987 LRDP for LBNL, the current project's cumulative impacts on hydrology and water quality, traffic, and public facilities are of special concern.

COB-1 The cumulative impact analysis includes consideration of the gross impacts associated with implementation of the UC Berkeley 2020 LRDP, but fails to include more specific project-level information that has become available during the past year. The specific impacts of several of these critical projects will be the subject of the upcoming Southeast Campus Integrated Projects (SCIP) EIR. Even though the SCIP DEIR will not be complete until sometime next year, it is clear that UC already has considerable information available about the timing, location, and magnitude of these projects. The Bevatron DEIR must include this information when evaluating the project's cumulative impacts.

In particular, we believe that the DEIR is seriously flawed because the cumulative impacts analysis

COB-1

specifically excludes the UC Berkeley Memorial Stadium Upgrade Project. The DEIR explains away this omission with the statement that “no detailed information about this project is available”. This is not correct. Consultants to the University of California (the Lead Agency for both the Building 51/Bevatron Project and the Memorial Stadium upgrade) have been working on plans for the Stadium for at least a year. On November 10, Chancellor Robert Birgeneau announced highlights of a master plan for the Stadium that begins with construction of a new 132,500 square-foot student athletic center adjacent to the west wall of the Stadium as well as a new law and business building on the west side of Gayley Road. Construction of the first phase of the stadium plan — the student athlete high-performance center — is scheduled to begin in December 2006, pending environmental review and approval by the UC Board of Regents, in order to be ready for the 2008 football season. This means that the Stadium construction would likely coincide with the LBNL Building 51/Bevatron project.

The Council previously requested that LBNL develop a long-term plan for future uses of the site. According to LBNL Staff, the DEIR for the new LBNL Long Range Development Plan will not be available until 2006. If demolition of Bevatron were delayed to allow the new Long Range Development Plan to specify future uses for the property, the DEIR would have to also analyze such future uses. However, two of the stated objectives of the demolition project (eliminate potential hazards associated with the building, reduce the burden on LBNL maintenance resources - DEIR, p. III-2) support moving ahead at this time.

While the City supports timely removal of hazardous materials and does not recommend that the demolition be delayed until LBNL can prepare a new LRDP, we believe that the project should not go forward until the DEIR is revised to include additional information about the project’s effects. To ensure that LBNL carries out the proposed activities “in a manner acceptable to the public” as the Council requested in 2003, the DEIR should be revised to respond to concerns that Staff and members of the public have identified including the following:

COB-2

1. The City understands that because LBNL is a Federal facility, project approval requires compliance with both State (CEQA) and Federal (NEPA) environmental review requirements. We are aware that the Federal Department of Energy (DOE) is preparing an Environmental Assessment (EA) for the project in compliance with the National Environmental Policy Act (NEPA). The Department of Energy expects to issue the Draft EA later this year. It will have a 30-day review and comment period. The DEIR does not indicate whether the LBNL Director, to whom the Board of Regents has delegated authority for certifying this EIR and approving the project, can approve the project before the NEPA environmental assessment is completed and approved by the Department of Energy. Moreover, the DEIR does not explain why LBNL and DOE did not prepare a single environmental document intended to meet both State and Federal requirements as the CEQA Guidelines (Section 15220 et. seq.) suggest. Aside from avoiding a time-consuming duplicative review process, it seems prudent for the CEQA document to incorporate any information included in the NEPA environmental document. On the other hand, if the NEPA assessment document does not include any new information there is no apparent reason for delaying its release or for preparing a single environmental review document as the Guidelines suggest.

COB-3

2. The transportation analysis in the DEIR is flawed because of reliance on inappropriate thresholds for determining which traffic impacts will be significant. The DEIR presents nine criteria for identifying significant impacts to the transportation system, two of which refer to roadway or

intersection capacity. The other five criteria are important but are not considered in this discussion.

COB-3

Under the Bevatron DEIR, a traffic impact becomes significant when it causes levels of service at an intersection to degrade below LOS D; or causes an increase in total volume of greater than 5 percent at an intersection operating at LOS E or worse. On roadway segments designated in the Congestion Management Plan, the impact is not considered significant unless the projected peak hour volume would increase by at least 5 percent regardless of whether the segment is projected to exceed the CMP standard without the project (p IV.K-7). The DEIR states that the 5 percent threshold is based on the fact that day-to-day traffic volumes can fluctuate by as much as 10 percent and, therefore, the average motorist is unlikely to perceive a 5 percent variation.

Whether the average motorist will notice an increase in traffic is not an appropriate criterion for determining whether an impact is significant. Various references to this threshold, such as those on page IV.K-11 are, therefore, misleading and irrelevant.

- a) 3. On page IV.K-5, the DEIR lists 22 intersections that UCB 2020 LRDP EIR evaluated and concludes, "All of these intersections operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours, except [two]." The DEIR needs to provide more information about the project's traffic impacts on the 20 intersections that are projected to operate at an acceptable LOS without the project to determine whether the project will degrade operations to worse than LOS D at any of these intersections and, if it will, what measures will be taken to mitigate any significant impacts.

COB-4

- b) Similarly, the cumulative analysis needs to provide additional technical documentation. Using the same list of intersections from the UCB 2020 LRDP EIR, the discussion of Cumulative Impacts (p. IV.K-16), concludes that all but three of the 22 intersections listed "would continue to operate at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours...". This is a vague statement, and no documentation is provided to document the impacts on levels of service. Moreover, as noted above, the DEIR did not consider the additional impact of traffic that will be generated by work on the Memorial Stadium.

- c) The DEIR's analysis of cumulative impacts needs to focus on the four to seven-year period when LBNL will carry out the Bevatron demolition including assessing impacts on levels of service and proposing mitigations for any intersections that would exceed the DEIR's significance criterion. The DEIR acknowledges that the intersections at University Avenue/San Pablo Avenue, University Avenue/Sixth Street, and Gayley Road/Stadium Rim Way are already operating at LOS F and that the project in combination with planned, pending, or other reasonably foreseeable projects, including implementation of the UC Berkeley 2020 Long Range Development Plan and construction of the Tien Center would further degrade conditions. As indicated above, to simply say "[t]he project-generated trips would add negligible traffic to long-term cumulative conditions", suggesting that the traffic increases would not be noticeable to the average motorist, is not an acceptable technical explanation.

- d) In regard to the Gayley Road at Stadium Rim Way intersection, "where delays within LOS F would increase", we recognize that project traffic at this intersection should not include large trucks, because the truck route is clearly defined elsewhere. However, because the DEIR does identify this intersection, it needs to assess the project's impacts in a technical and complete manner.

COB-4

d)

Although the intersection of Gayley Road and Stadium Rim Way (Rim Road) is within the UC campus, the DEIR needs to assess the effect that traffic operations at this location would have on other locations in the City. For instance, will the queuing for northbound Gayley extend back to affect the City street intersection of Piedmont at Bancroft? Will congestion on Rim Road result in traffic taking alternate routes through residential neighborhoods south of the Stadium such as Panoramic, Prospect, Channing Way and other streets? Combined with the impact of construction at the Memorial Stadium, the project's cumulative impacts on the Gayley-Rim Road intersection could have spillover effects on intersections along the Piedmont-Warring corridor in addition to an adverse impact on the residential neighborhoods south of the campus.

COB-5

4. The DEIR acknowledges that the proposed project would have a significant unavoidable impact on a historical resource as defined by the CEQA Guidelines. An addendum to the existing Historic American Engineering Record (HAER) to document the site's historic significance has been prepared for the Historic American Building Survey (HABS) and is being reviewed, but this information is not included in the DEIR or otherwise available for public review. Even though such documentation cannot reduce the impact of the proposed demolition of an historic resource to less than significant levels, the LBNL should make all of this documentation available for public review prior certification of the EIR. In addition to preparing a written and photographic record, LBNL should identify other ways to recognize the site's significance.

COB-6

5. The DEIR concludes that the project individually and together with other proposed LBNL and UC Berkeley projects would have no impact or a less than significant impact on hydrology and water quality. This conclusion is based, in part, on information that the impacts of implementing the UC Berkeley 2020 Long Range Development Plan will have less than significant impacts on the Strawberry Creek watershed. The DEIR also relies on continuing implementation of best management practices (BMPs) and other measures from the LBNL's facility-wide Storm Water Pollution Prevention Plan (SWPPP) and Storm Water Management Plan (SWMP). Enforcement of these plans and implementation of the required BMPs would be the responsibility of LBNL monitors who would be on-site during all demolition operations to ensure that contractors comply with the stormwater/wastewater management plans (p. IV.G-11)

As noted below, the DEIR does not include information showing how well these measures have mitigated water quality impacts to date. Moreover, aside from the information provided in the discussion of hazards and hazardous materials (Chapter IV), the DEIR does not include a quantitative description of existing water quality conditions. Since the project will continue for some years, the only way to ensure the efficacy of BMPs is to take runoff samples before the project commences and as it goes forward to evaluate the effectiveness of stormwater pollution prevention measures and make adjustments as needed. Sampling and analyses should be for sediment content as well as known pollutants such as lead, oil and grease, asbestos, etc. Annual reports should be made available for public review as well as to the Regional Water Quality Control Board.

COB-7

6. The DEIR indicates that electrical and low sulfur diesel power will be used on site for equipment associated with demolition. The City recommends that "ultra-low sulfur" be used, not low sulfur.

7. The DEIR states that project will generate about 34 one-way truck trips per day and 4,700 one-way truck trips over the 4 to 7 years it will take to complete the job. These will be heavy trucks including flatbed and soil-haul trucks. About 5 percent may be overweight, the rest within "normal truck weight limits." The DEIR concludes that, even when considered together with other construction projects, the impact on City streets will be less than significant, and that no mitigation is required. The DEIR states that no damage to roadways is expected "beyond that which would be considered normal wear and tear" because the City's designated truck routes are designed and constructed to sustain regular use by heavy trucks.

COB-8

The DEIR includes a mitigation measure stating that UC will reimburse the City for its fair share of costs associated with damage to City streets from University construction activities "provided that the City adopts a policy for such reimbursements applicable to all development projects within Berkeley". The DEIR is correct that the City does not at this time have a specific program for recouping the cost of damage to city streets from construction projects. The City does, however, require private applicants to pay for improvements as a condition of approving projects that are subject to discretionary review under the Municipal Code. The fact that UC is not subject to the City's land use regulations, does not, however, eliminate its responsibility for mitigating the significant environmental impacts of its projects pursuant to the California Environmental Quality Act. Therefore, the DEIR should include a mitigation measure to reimburse the City for damage to streets that will occur as a result of up to seven years of on-going heavy truck traffic. The specifics of the mitigation should be negotiated with the City prior to release of the FEIR.

8. According to the DEIR, about a third of the shielding blocks and other items will have detectable radioactivity above the DOE limit and, therefore, will need to be sent to an approved disposal site, probably in Utah or Nevada. The DEIR states that about half of the truck trips would carry some type of hazardous waste, including low-level radioactive waste. The shipments with the highest levels of radioactivity would be two or three shipments of depleted uranium (p. IV.F-22-23). **COB-9a)** The DEIR provides information about the potential hazard posed to workers involved in transport and to members of the general public (e.g. pedestrians or passengers in cars along the route) but does not provide information about the potential hazard to those who live along truck routes. **COB-9b)** Also, even though the DEIR includes data on accident potential on routes within the City, it doesn't discuss potential hazards during transport once the trucks reach Interstate 80. This information is particularly important because of the congested conditions on I-80. **COB-9c)** The DEIR should also include information about the capacity of the receiving sites.

**COB-9
a, b, c**

9. The DEIR states that the 4,700 flatbed and dirt-haul trucks required to transport materials to and from the site would be diesel-powered, and that the exposure to the public of diesel particulate matter emissions would be greater than on-site exposure during demolition because the trucks would pass within approximately 30 feet of residences.

COB-10

While Bay Area Air Quality Management District (BAAQMD) considers construction-related impacts to be less than significant if required dust-control measures are implemented, the proposed number of diesel-powered truck trips that will be routed through the City is extremely high. In addition, there are significant adverse public health impacts from particulate matter beyond those modeled for cancer risk. Since the science is not yet available to calculate the additional asthma attacks or death of sickly or elderly people along the transportation corridor, it

- COB-10** | would be prudent to take protective measures, similar to the ones identified for on-site diesel smoke generating activities. The DEIR should propose a mitigation measure that requires all haulers to use only ultra-low sulfur or biodiesel for the trips to and from LBNL.
- COB-11** | 10. The DEIR relies on a number of mitigation measures from the amended 1987 LRDP EIR but does not include information to show that these measures have successfully mitigated the impacts they were intended to reduce. Such information should be available from the CEQA-mandated monitoring that LBNL is required to conduct.
- COB-12** | 11. The DEIR incorporates a mitigation measure from the 1987 LRDP EIR regarding preparation of an annual self-assessment that summarizes environment, health, and safety program activities, and identifies any areas where LBNL is not in compliance with laws and regulations governing hazardous materials, hazardous waste, hazardous materials transportation, regulated building components, worker safety, emergency response, and remediation activities. Without oversight from the City or another outside agency and in the absence of State regulators, it is questionable whether such analysis would be as vigilant as the City and its residents desire. Given the impacts identified in the DEIR, the City recommends that a mitigation measure be added that LBNL provide regular reports during the Bevatron demolition project. Ideally, the reports would be posted on LBNL's web site and sent to all regulatory agencies and the City for information.
- COB-13** | 12. The DEIR provides little information about how the site will be used between completion of the demolition project and approval of a longer-term plan for development. It states that future development would have to be consistent with the 1987 LBNL LRDP as amended or the pending 2006 LBNL LRDP. At a minimum, the DEIR should indicate what use of the roughly four acre site would be consistent with the 1987 LBNL LRDP, which will be applicable to LBNL until such time it is amended or replaced. The DEIR suggests that about 2.25 acres would not be used for any purpose while the remaining area would be used for parking and staging. It is not clear whether these uses would cease following demolition or if the remaining area of about 1.75 acres would be used for parking for LBNL employees and/or visitors. It should be noted that at the Scoping Meeting it was stated that the 2.25 acres would be returned to open space use. The DEIR needs to provide more information about possible near-term uses of the property and assess any potential environmental impacts. This is particularly important if LBNL intends to use the site for parking.

Please contact Wendy Cosin, Deputy Planning Director, if you have any questions. She can be reached at 981-7402 or wcopin@ci.berkeley.ca.us. Thank you again for the opportunity to comment.

Sincerely,



Phil Kamlarz
City Manager

cc: The Honorable Mayor and Members of the City Council
Dan Marks, Planning and Development Director
Manuela Albuquerque, City Attorney

Comments on Building 51/Bevatron DEIR
December 7, 2005
Page 7 of 7

Arrietta Chakos, Assistant City Manager

Communication Via e-mail

To: Daniel J. Kevin, Environmental Planning Group, LBNL
From: Jill Korte, Chair, City of Berkeley Landmarks Preservation Commission
Date: December 7, 2005

Subject: Comments on the Demolition of Building 51 and the Bevatron Draft Environmental Impact Report.

Dear Mr. Kevin,

Thank you for the opportunity to comment on the Demolition of Building 51 and the Bevatron Draft Environmental Impact Report (DEIR), dated October 21, 2005. The City of Berkeley Landmarks Preservation Commission (LPC) directed me to prepare these comments. A LPC subcommittee and I have reviewed the report with respect to historic resources and have the following comments:

- LPC-1** | • The draft EIR is “tiered off” of Lawrence Berkeley National Laboratory’s (LBNL) Long Range Development Plan (LRDP) of 1987 and the DEIR states that a new draft LRDP, in development for several years, is expected to be released in 2006. The LPC questions the appropriateness of referencing an 18-year old document and believes the issuance of this DEIR may be premature. The updated LRDP will result in the best assessment of the goals and objectives of this project, in the context of the LBNL’s most current evaluation of its future needs, its planned projects, and its overall scientific mission. The LPC is also concerned that failure to reference an updated LDRP may effectively create a segmentation of project review, unallowable under both CEQA and NEPA.
- LPC-2** | • There is no documentation to support the analysis of alternatives in the draft EIR, and no references are provided to suggest that a detailed analysis was completed. Without the opportunity to review the supporting documentation for the alternatives analysis, effective review of the DEIR by the public with respect to historic resources has been frustrated. The DEIR should be re-released with the appropriate documentation and additional time provided for public comment.
- LPC-3** | • The effect of the alternatives on Building 51 and the Bevatron’s eligibility for the California Register should also be discussed in the DEIR, in addition to the discussion of its eligibility for the National Register.
- LPC-4** | • The adaptive reuse alternative should include the creation of an interpretive display, within the adaptively reused building, as a mitigation measure (in addition to HABS and HAER documentation). An alternative suggested by the LPC subcommittee and the public includes demolishing the Pflueger-designed annex to expose the original 1953 structure and rehabilitating and reusing the site as a teaching (living history) site.

- | | |
|---------------|--|
| LPC-5 | <ul style="list-style-type: none"> The DEIR (Page IV.D-4) does not discuss the National Register Criteria under which Building 51 and the Bevatron is eligible for listing. The DEIR also does not discuss the criteria under which Building 51 and the Bevatron is eligible for the California Register. Although applications to the National and California Registers often focus on one of the eligibility criteria, the DEIR should discuss all criteria which effectively do contribute to the eligibility of Building 51 and the Bevatron for the Registers. |
| LPC-6 | <ul style="list-style-type: none"> The DEIR should discuss the findings of the Historic American Building Survey (HABS) report and the Dobkins and Corbett <i>Historic Architectural Evaluation Report</i>, and the architectural importance of Building 51 and the Bevatron from a historical perspective. The DEIR should also provide information on the architectural firm of Masten and Hurd (Page IV.D-2), and a discussion of the architects' significance and the importance of the Bevatron within the architects' body of work. |
| LPC-7 | <ul style="list-style-type: none"> With respect to cumulative impacts, the DEIR should include discussion and comparison of the existing particle accelerators of similar size in terms of architectural design (Page IV.D-11). The DEIR should also discuss and compare historic status and existing protections for the other particle accelerators of similar size. |
| LPC-8 | <ul style="list-style-type: none"> The referenced memorandum of agreement among DOE, SHPO, and the Advisory Council on Historic Preservation (Page IV.D-9) should be included as an appendix to the DEIR. The date of signature of the agreeing parties should also be cited in the DEIR text. |
| LPC-9 | <ul style="list-style-type: none"> The EIR incorrectly describes the City of Berkeley's criteria for designation as a Landmark or Structure of Merit (Page IV.D-6). The criteria actually consist of <i>two</i> levels of designation for historic buildings: properties of exceptional significance (landmarks) <i>and</i> structures of merit, which are properties that do not meet landmark criteria but are worthy of preservation as part of a neighborhood, block, or street front. |
| LPC-10 | <ul style="list-style-type: none"> The City of Berkeley has not approved the demolition of the Blood House as stated in the DEIR (Page IV.D-11). Building 51 and the Blood House are so different in type, location, and age that the LPC feels that inclusion of the Blood House in the discussion of cumulative impacts is not necessary. |

This concludes the LPC comments on the DEIR.

As you may already be aware, Building 51 and the Bevatron was recently initiated for designation as a City of Berkeley landmark. The public hearing was opened on

December 5th and has been continued to the LPC's January 2006 meeting. We will keep you informed as to the outcome of the LPC proceedings.

Again, the LPC appreciates the opportunity to comment on the draft EIR.

Sincerely,

Jill Korte, Chair
City of Berkeley Landmarks Preservation Commission

Committee to Minimize Toxic Waste

P.O. Box 9646, Berkeley, CA 94709

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Daniel Kevin
Environmental Planning Group
Lawrence Berkeley National Laboratory
One Cyclotron Road, MS 69R0201
Berkeley, CA 94720

December 6, 2005

Subject: Comments on The Lawrence Berkeley National Laboratory's (LBNL) Draft Environmental Impact Report (DEIR) for the Demolition of the Bevatron Particle Accelerator, Building 51 and 51A.

Dear Mr. Kevin,

In December of 1995, the California State Office of Historic Preservation, Department of Parks and Recreation listed the Bevatron, Building 51 and 51A as California Historic Resources with the following statement:

"Building 51 and 51A are eligible for inclusion on the National Register of Historic Places under Criterion Consideration G, as defined in 36 CF 60.4. The Building has strong associations with historic developments in the field of particle physics and was the site of a number of significant breakthroughs.

The Bevatron is also noted for its associations with three Nobel Prize-winning physicists (Louis Alvarez, Owen Chamberlain, and Emilio Segre). The breakthroughs developed by these three men was the result of the technology provided by the Bevatron, and its position as the premier facility of its type in the 1950s." (Attachment 1.)

For the reasons noted in this statement, we consider it mandatory that LBNL and the Department of Energy (DOE) preserve the Bevatron , Building 51/51A Complex, as a living science history site, a museum and education center for the benefit of future generations interested in science, history, architecture and engineering.

However, there are other reasons that preservation of the Bevatron must be the alternative chosen, and not the demolition of the building. These reasons have to do with the environmental impacts which will be miniscule with the Bevatron preserved in place, compared to the environmental impacts arising from the demolition of the facility. Preservation, therefore, provides the greater protection of the health and safety to

employees, nearby residents and wildlife (i.e. threatened Alameda Whipsnake) and those exposed along routes for trucking out radioactive and hazardous waste. Some of the potential environmental impacts from the Bevatron demolition are as follows:

- radioactive, lead and asbestos dust permeating the atmosphere of the Berkeley Lab, surrounding neighborhoods, UC dormitories,
- radioactive and toxic dusts being washed down to further contaminate Berkeley's groundwater which should be of potential beneficial use as drinking water in case of disasters or severe drought,
- exposure of pedestrians, shoppers, vehicle drivers and passengers to radioactivity as radioactive Bevatron concrete and metal debris is trucked on City of Berkeley streets (i.e. Hearst, Oxford, University Avenue, Shattuck Avenue, Adeline, and Ashby Avenue) to the freeway,
- severe and extended exposure would occur if any of the trucks hauling radioactive debris were involved in an accident. This is quite probable in view of the twelve accidents per year involving truck collisions along the project truck routes, that occurred between 2002-2004. (p. IVK-15 Table IVK-1 Draft EIR 10/21/05),
- exposing other communities to radioactive and hazardous waste by dumping it in nearby landfills, i.e. Altamont, Richmond, Nevada Test Site, Clive Utah, etc.
- continuing to speak of "low level" radioactive waste vs. "high level" radioactive waste as though the former were safe, despite the recent National Academy of Sciences Panel BEIR VII (Committee on Biological Effects of Ionizing Radiation) Report that there is no safe dose of radioactivity (Attachment 2.),
- Department of Energy treating materials and waste with 2pCi/g of radioactivity and the Department of Transportation treating materials and waste with 270pCi/g of radioactivity as non-radioactive, which requires less safety precautions during transportation and allows the dumping of these materials in ordinary landfills and, therefore, their potential recycling/reuse in household goods and commercial medical equipment,
- a health disaster to project workers, lab employees, students and downwind neighbors should precautionary measures fail during the demolition of the transit exterior siding of Building 51, which contains 20% asbestos fibers.

The DEIR is deficient in many respects. A review sincerely concerned with a thorough investigation of the potential environmental impacts of demolition of Building 51 and the Bevatron must provide in the Final EIR (FEIR), under the DEIR's topics addressed below, the following information necessary to an adequate evaluation: **Air Quality (No. 3), Biological Resources (No. 4), Cultural Resources (No. 5), Geology and Soils (No. 6), Hazards and Hazardous Materials (No. 7), Hydrology and Water Quality (No. 8), and Transportation and Traffic (No. 15)**

Hydrology and Water Quality (No.8)

- CMTW-1 | The FEIR must provide: a geologic cross section of the three groundwater plumes which converge at the Bevatron site, i.e. Building 51/64 VOC plume, Building 7 Freon/VOC plume and the old town VOC/Building 7 Diesel plume, to show the depth and concentration of groundwater contamination in the four acre Bevatron site and vicinity.
- CMTW-2 | In addition to the Bevatron core area, more monitoring wells should be located laterally along the Cyclotron Fault and New Fault because they could act as conduits for the contaminated groundwater.
- CMTW-3 | Additional groundwater monitoring wells are needed (a) west of the northern lobe of the Building 51/64 plume as well as (b) west of the western lobe of Building 71 solvent plume to show whether the two plumes converge into a topographic swale and (c) west of the old town plume, specifically in the area between Buildings 46 and 51. All of these plumes are in the Blackberry Creek Watershed and drain west toward the city of Berkeley and San Francisco Bay. (Attachment 3.)
- CMTW-4 | A sampling strategy must be developed and implemented prior to the circulation of the FEIR to characterize and provide comprehensive data on the extent of the potential groundwater contamination plume under the Building 5 1/Bevatron. Soil boring(s) and testing should be part of this investigation.
- CMTW-5 | The FEIR should show a map of the groundwater plumes in 1995 and in 2005, as they expanded during the RCRA investigations under LBNL's Environmental Restoration Program, so as to illustrate the direction and rate of their movement.
- CMTW-6 | According to the Environmental Checklist's Project Description: "Soil and groundwater contamination are known to be present in some areas beneath Building 51 /Bevatron." The primary known chemicals of concern are chlorinated volatile organic compounds (VOCs) in soil and groundwater. In addition, PCBs have been detected in some groundwater samples. Contamination in soil, outside the plume source areas, has included primarily chlorinated VOCs, petroleum, aromatic hydrocarbons, polycyclic aromatic hydrocarbons, PCBs and Mercury.
- CMTW-7 | It appears that the location of the groundwater monitoring wells in the general Bevatron site is insufficient to characterize the full extent of these plumes. Are the contamination plumes interrelated? It appears that there are no groundwater sampling wells located in the basement of the Bevatron core area.
- CMTW-7 | If the Bevatron structure is removed, what are the potential effects of the increased rainfall on the now pervious site? What protections will be put in place in the future site design to protect further impact of rainwater on existing groundwater plumes? How will the increased groundwater influence slope stability?

CMTW-8 | **Pulling the concrete plug:** How will the removal of the Bevatron and its subterranean structures impact the movement and current hydraulic controls of these groundwater contamination plumes? This factor alone is reason for additional groundwater evaluation and monitoring wells. How is LBNL preparing to prevent any contamination from entering the creeks and ending up in downtown Berkeley where Strawberry Creek flows day-lighted through many public and private properties? For this reason, all site clean-up must be done to residential standards.

Biological Resources (No. 4) and Hazards and Hazardous Materials (No. 7)

The FEIR must answer the following questions and provide specified information as follows:

- CMTW-9** | 1. Tables showing the specific quantities of activated (containing induced radioactivity) material (e.g., electromagnets, scrap metal, steel, copper, lead, concrete blocks, etc.) and by which of the following radionuclide and by what amount of radioactivity (expressed in Curies) they are activated: Ar-42, Ba-133, Co-60, Cs-137, Eu-152, Eu-154, Fe-55, Ti-44, etc.
- CMTW-10** | 2. What is the level of “natural” and/or “background” radioactivity LBNL assigns to and/or deducts from each specific material before shipping?
- CMTW-11** | 3. What is the actual activation level of each material to be shipped, particularly for every material referred to as being “slightly radioactive” and “slightly activated”? (DOE 2pCi/g vs. DOT 270pCi/g?)
- CMTW-12** | 4. Swipe sampling protocols, e.g. the criteria for selecting items “thought to pose reasonably foreseeable risks” from surface contamination: the portion of the surface to be swiped.
- CMTW-13** | 5. The quantities of “non-activated” metals and concrete shielding blocks that are scheduled for shipment to government and private sector parties, with certification by non-DOE parties that the metal within the blocks would not be recycled.
- CMTW-14** | 6. The quantities of “non-activated” concrete blocks to be broken into rubble and released for construction projects and road building (again the metal contained within the blocks to be certified non-recyclable as above (see #5)
- CMTW-15** | 7. A description of the air monitoring system LBNL has in place to determine any changes in air quality during the deconstruction process, if it proceeds.
- CMTW-16** | 8. The capacity of first responders to deal with potential accidents or spills.
- CMTW-17** | 9. The detection limits of the surveying instrumentation.
- CMTW-18** | 10. Name and location of the specific municipal landfills to which “non-activated” materials will be sent where the landfill operator must certify that the metals will not be recycled.

- CMTW-19 | 11. Specifically what is to be shipped to the Nevada Test Site and Yucca Mountain, Nevada, Altamont landfill in Alameda County and Richmond landfills in Contra Costa County, CA, a private landfill in Clive, Utah, Hanford, WA, or other DOE facilities/sites?
- CMTW-20 | 12. The effects on the potential beneficial uses of Berkeley's large aquifer, the Lennart Aquifer) i.e. availability in times of drought. Please describe LBNL's request to the Office of the U. C. President to declare groundwater at LBNL non-potable, i.e. initiating the process of declaring LBNL site (Strawberry Creek watershed) as **Brownfields** .
- CMTW-21 | 13. Potential effects upon the endangered Alameda Whip snake for which LBNL is critical habitat.
- CMTW-22 | 14. What are the cumulatively significant effects, on the human (and endangered Alameda Whip snake) environment, of the Bevatron demolition concurrent with the decommissioning and decontamination of the National Tritium Labeling Facility and the construction and operation of the Molecular Foundry.
- CMTW-23 | 15. How radioactive and hazardous materials will be packaged for shipping. How will the trucks transporting hazardous site debris be externally identified as they move through our city and beyond Berkeley.
- CMTW-24 | 16. How will radioactive materials, those considered to be "non-radioactive", be packaged for shipping. What are the various criteria used by LBNL to determine materials to be "non-radioactive"?
- CMTW-25 | 17. A consideration of alternatives to the demolition and shipping of unpackaged radioactive materials, which are considered non-radioactive, e.g. allowing radioactive materials to decay in place, without further demolition until fully decayed.
- CMTW-26 | 18. A comprehensive description of the various beam targets (including the magnet gap) and the beam dump areas during the Bevatron's forty-year history, and a sampling strategy to determine where the highest concentrations and types of radioactivity are located.
- Air Quality (No.3) and Transportation and Traffic (No. 15)**
- CMTW-27 | 1. If LBNL ends up proceeding with the shipping of the Bevatron debris, all trucks involved must have hazardous materials warning placards in accord with the opinion of the National Transportation Safety Board and the Executive Director of the International Association of Fire Chiefs (West County Times, April 9, 2005). The hazardous materials signs on trucks help firefighters and health officials respond to accidents in the event that hazardous contents are exposed. If the trucks are not properly marked, community safety and emergency responders safety will decrease significantly.
- CMTW-28 | 2. All debris trucks should be fully enclosed van-type vehicles.
- CMTW-29 | 3. The air quality along the truck route should be monitored from the Bevatron to 1-80 with a stationary air monitoring protocol.
- Geology and Soils (No.6)**
- CMTW-29 | The Bevatron is located on a four-acre site in the western portion of LBNL within the Blackberry Creek (a.k.a. the North Fork of Strawberry Creek) Watershed. The site is in the Hayward/East Canyon/Wildcat Canyon Earthquake Fault Zone, surrounded by two cross faults: the Cyclotron Fault to the south and the New Fault to the north.
- CMTW-30 |

The Final EIR (FEIR) must include:

CMTW-31 | 1. A most comprehensive earthquake fault map that would include all the faults in the entire Strawberry Creek Watershed, whether active or not, and an interpretation of the significance of the presences of these faults regarding the transport of surface and groundwater within the area of LBNL, where the Bevatron is located.

CMTW-32 | 2. Watershed map for the LBNL hill site showing the various watershed and sub-watershed divides with a detail of the Blackberry Creek watershed and the four-acre Bevatron site.

3. A Seismic Hazard Zone Map which would show areas in the Strawberry and Blackberry Creek Watersheds where previous landslides had occurred, as well as all topographic, geological, geotechnical, and subsurface water conditions which indicate a potential for permanent ground displacement.

CMTW-33 | According to a 1949 geologist (C. Marliave) report on the bedrock conditions at the Bevatron site "...the area at the Bevatron is to be excavated and leveled off to elevation 710. The bedrock beneath this beveled surface will be comprised of poorly consolidated Orinda sediments... The Orinda formation absorbs water freely and the lava flows and breccia that are associated with it are also quite pervious so that the whole mass becomes readily saturated... There appears to have been considerable land sliding in the amphitheatre in which the Bevatron is to be located - and during periods of heavy rainfall, the underlying Orinda sediments become quite soft from absorbed water... seeps come out of the ground in many places.. there are two known permanent springs in the area where tunnels have been driven into the hillside and pipes leading out from the caved entrances have been flowing water for many years."

Even though landside deposits may have been modified or have fill placed over them, their subsurface characteristics/failure planes may exert controls on groundwater flow patterns and thus on the movement contaminant plumes at the hill site. Mapping of the historic landside distribution in the FEIR is extremely important for understanding/interpreting how the contaminant plumes may be distributed on the hill. (See section No. 8.)

CMTW-34 | 4. What is the current configuration and condition of the engineered drainage around the Bevatron site? How is groundwater from the seeps and springs intercepted and captured? Where are water sources diverted? Do creek beds of the historic creeks function as conduits for these waters? According to the 1875 F. Soule Map titled: Strawberry Valley and Vicinity showing the natural sources of the water supply of the University of California, at least two of the branches of the North Fork of Strawberry Creek were located directly under the Bevatron Complex. Please provide a historic map of the site showing these watercourses and their current state.

Cultural Resources (5)

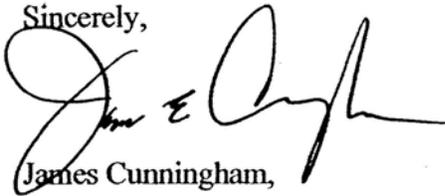
The FEIR must carefully consider alternatives to demolition and removal that would allow the Bevatron and its contamination to remain on site in relative containment. On site containment will allow the radioactivity to decay in place and not be hauled away to impact other communities. This would also preserve the historic aspects of the Bevatron as it is eligible for listing in the National Register of Historic Places for the research in particle physics that resulted in four Nobel prizes. In December 1995 the California State Office of Historic Preservation listed the Bevatron, Buildings 51 and 51A, as California Historic Resources, as stated earlier.

CMTW-35

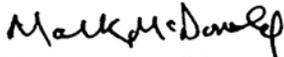
The projected cost of 85 million dollars for the Bevatron demolition and removal is truly appalling taking into consideration the enormous initial cost of the construction of the facility in the early 1950s, which was approximately 10 million dollars. Therefore we propose that LBNL, in celebration of its 75th Anniversary in 2006, declare an international architectural competition for the design and restoration of the Bevatron, and designate it as a historic and educational resource/landmark, as proposed by Nobel Laureate Owen Chamberlain. (Attachment 4).

The shape of the Bevatron and its steel construction lends itself magnificently to the possibility of it being a center courtyard feature for future development at the site. This option would save taxpayers over 80 million dollars and save many communities from the serious potential pollution which the demolition, transportation, and waste dumping would bring about.

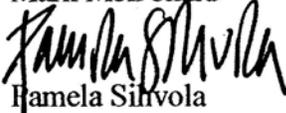
Sincerely,



James Cunningham,

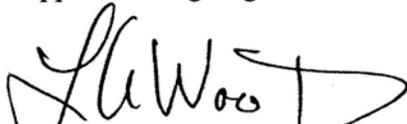


Mark McDonald



Pamela Silvola

In support and signing onto concerns as stated above



L A Wood, City of Berkeley Commissioner *

* Identification only

ATTACHMENT #1

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

PETE WILSON, Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824



(916) 653-6624
FAX (916) 653-9824

December 5, 1995

DOE941104A
DOE950622A

Anthony Adduci, DOE/Oak/NHPA Compliance Officer
Department of Energy
Oakland Operations Office
1301 Clay Street
OAKLAND CA 94612-5208

Re: Building 51 and 51A Complex, Lawrence Berkeley Laboratory,
Berkeley, Alameda County.

Dear Mr. Adduci:

Thank you for submitting to our office your June 15, 1995 letter and supporting documentation regarding the proposed determination of eligibility of Building 51 and 51A at the Lawrence Berkeley Laboratory, Berkeley, Alameda County. Also known as the Bevatron Building, Building 51 was constructed in 1954 to house the Bevatron, a high-energy particle accelerator used in the study of high energy nuclear processes of the cosmic energy range.

Utilized mostly during the 1950s and 1960s, the Bevatron was considered the most productive accelerator of its time. During this period four Nobel Prizes were awarded to physicists involved with conducting particle physics research in whole or in part at the Bevatron. During the 1970s, the Bevatron, superseded by faster accelerators, was shifted from acceleration of protons to work dealing with the acceleration of heavy ions. Renamed the Bevalac, the Bevatron was linked to the SuperHILAC, a linear accelerator located up the hill. The Bevalac was used for medical research, cosmic ray experiments, and radiation therapy in the treatment of cancer. After an upgrade in 1981, the Bevalac became the only accelerator in the world capable of accelerating all of the naturally occurring elements of the periodic table. The facility was closed in 1993.

You are seeking our comments on your determination of the Building 51 and 51A for inclusion on the National Register of Historic Places (NRHP) in accordance with Section 106 of the National Historic Preservation Act. Our review of the submitted documentation leads us to concur with your determination that Building 51 and 51A are eligible for inclusion on the NRHP under

Criterion Consideration G, as defined in 36 CF 60.4. The building has strong associations with historic developments in the field of particle physics and was the site of a number of significant breakthroughs. The Bevatron is also noted for its associations with three Nobel Prize-winning physicists (Louis Alvarez, Owen Chamberlain, and Emilio Segre). The breakthroughs developed by these three men was the result of the technology provided by the Bevatron, and its position as the premier facility of its type in the 1950s.

Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Original Signed by
Cherilyn Widell

State Historic Preservation Officer

California State OFFICE OF HISTORIC PRESERVATION

Department of Parks and
Recreation

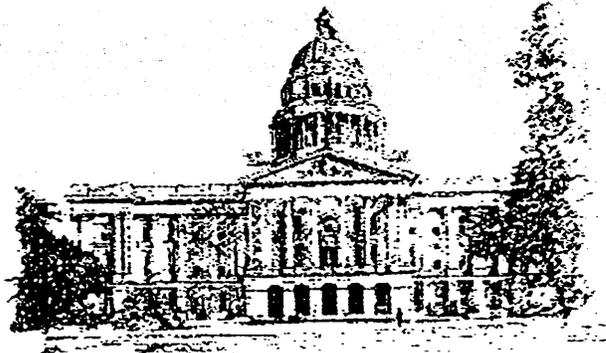
P.O. Box 942896

Sacramento, CA 94296-0001

Phone: (916) 653-6624

fax: (916) 653-9824

calshpo@ohp.parks.ca.gov



Date: 4/4/05

APR-04-2005 MON 03:35 PM

FAX NO.

P. 02

HISTORIC PROPERTY FILE

SINGLE PROPERTY PRINTOUT

04/04/05

Prop.#: 098632 BUILDING 51 AND 51A-LAWRENCE LIVERMORE LABORATORY
Prim.#: 01-008387
Address:

BERKELEY

County: ALA
X-Street:
Vicinity:
Parcel #:

Category: BUILDING
Owner Type:

Present Use:

Other Recognition:

CHL #:

Dates of Construction: 1954 -

Architect:

Builder:

Historic Attributes:

Eth:

Previous Determinations on this property:

Program	Prog. Ref Number	Eval Crit	Eval-date	Evaluator
HIST.RES.	DOE-01-95-0105-0000	2S2 AB	12/05/95	CLARENCE CAESAR
PROJ.REVW.	DOE950622A	2S2 AB	12/05/95	CLARENCE CAESAR

Key to EVAL:

2S2: Indiv prop det eligible to NR by Section 106 consensus. CR Listed.



Even lower radiation poses risk, panel says

No exposure level found below which dosage is harmless

By H. Josef Hebert
ASSOCIATED PRESS

WASHINGTON — The preponderance of scientific evidence shows that even very low doses of radiation pose a risk of cancer or other health problems and there is no threshold below which exposure can be viewed as harmless, a panel of prominent scientists concluded Wednesday.

The finding by the National Academy of Sciences panel is viewed as critical because it addresses radiation amounts commonly used in medical treatment and is likely also to influence radiation levels the government will allow at abandoned nuclear sites.

The nuclear industry, as well as some independent scientists, have argued that there is a threshold of very low-level radiation at which exposure is not harmful, or possibly even beneficial. They said current risk modeling may exaggerate the health impact.

The panel, after five years of study, rejected that claim.

"The scientific research base shows that there is no threshold of exposure below which low levels of ionized radiation can be demonstrated to be harmless or beneficial," said Richard R. Monson, the panel chairman and a professor of epidemiology at Harvard's School of Public Health.

The committee gave support to the "linear, no threshold" model that is currently the generally acceptable approach to radiation risk

assessment. This approach assumes that the health risks from radiation exposure decline as the dose levels decline, but that each unit of radiation — no matter how small — still is assumed to cause cancer.

"It is unlikely that there is a threshold below which cancers are not induced," said the report, although it added that at low doses "the number of radiation-induced cancers will be small." And it said cancers from such low-dose exposures may take many years to develop.

The panel, formally known as the Committee on Biological Effects of Ionizing Radiation, or BEIR, generally supported previous cancer risk estimates — the last one by an earlier BEIR group in 1990.

Contrary to assertions that risks from exposure to low-level radiation may have been overstated, the panel said "the availability of new and more extensive data have strengthened confidence in these (earlier) estimates."

The committee examined doses of radiation of up to 100 millisievert, a measurement of radiation energy deposited in a living tissue. A single chest X-ray accounts for 0.1 millisievert, average background radiation 3 millisievert a year and a whole body CT scan delivers 10 millisievert.

The committee estimated that 1 out of 100 people would probably develop solid cancer or leukemia from an exposure of 100 millisievert of radiation over a lifetime with half of those cases being fatal.

The report noted that exposure from a whole body CT scan is much higher than the usual X-ray, and it raised concerns about the frequency in which such medical diagnostics should be used.

San Francisco Chronicle

THURSDAY, JUNE 30, 2005

415-777-1111 46 CENTS PLUS TAX

10/24/05

Owen Chamberlain
Santa M. Pugh ChamberlainCouncil Meeting
Oct. 25, 2005

(510) 524-4654

885 Santa Barbara Rd.
Berkeley, Ca. 94707-2018

Ad - ACENNA ITEM 22 -

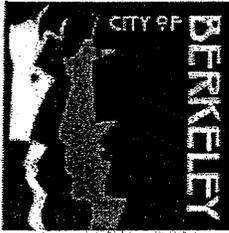
BEVATRON at LBNL. KEEP IT!

This is to strongly request the Council to vote the conversion of the Bevatron to a historical & educational resource. It is to endorse the position taken by the Peace & Justice Commission.

This note is being written for Owen Chamberlain. Along with Emilio Segrè, Clyde Wiegand & others, O. C. was involved in the discovery of the ANTI PROTON at the Bevatron. This experiment will be discussed in a 50 anniversary symposium at LBNL this Friday, Oct 28 & this Saturday, Oct 29, with O.C. as Hon. Chair.

Owen C. is severely disabled & cannot sign for himself.

Santa M. Pugh Chamberlain
510-524-4654 (wife)



Peace and Justice Commission

ACTION CALENDAR
October 25, 2005

To: Honorable Mayor and
Members of the City Council

From: Peace and Justice Commission

Submitted by: Steve Freedkin, Chair, Peace and Justice Commission

Subject: Bevatron Preservation

RECOMMENDATION

Adopt a Resolution recommending that the City Council request: 1) the Department of Energy, the Lawrence Berkeley National Laboratory and their managing agency, the University of California, to continue with their original plan to preserve the Bevatron Facility as a place of merit on the National Register of Historic Places for the benefit of future interested individuals and students of science, history and architecture; and 2) that the \$85 million budgeted for the demolition of the Bevatron be primarily redirected to the decontamination of toxic underground plumes at Lawrence Berkeley National Laboratory as promised with enough spared to complete the conversion of the accelerator facility for safe public access.

BACKGROUND

The Bevatron, a huge nuclear accelerator apparatus and the distinctive building that houses it, were constructed in 1954 at a huge cost to taxpayers. The facility should be saved from the wrecking ball and preserved for the benefit of future science students and historians. Preserving the world famous Bevatron also protects Berkeley citizens from numerous avenues of exposure to large amounts of radioactive and hazardous substances that will be released into the air and creeks if demolished.

Lawrence Berkeley National Laboratory (LBNL) requested and received in 1995 an eligibility status to the National Register of Historic Places. Four physicists were awarded Nobel Prizes for their work at the facility, which was continuously upgraded so as to continue contributing valuable research to medicine, cosmic ray experiments, and radiation therapy for cancer treatment. Experiments ceased at the Bevatron in 1993.

The Bevatron's experiment process utilized numerous hazardous substances such as mercury, asbestos, lead, and others. The actual operation of the accelerator induced radioactive elements

of many types deep inside the walls and shielding blocks. Most of these hazardous elements would remain relatively harmless undisturbed inside the structure which would be in accordance with the new "decay in place" philosophy advocated by leading environmental organizations.

Extensive study of the geology and hydrology of LBNL and the Bevatron site itself has shown an extensive web of interconnecting feeds into all the major creeks in Berkeley. Demolishing a project of this size with the release of this amount of toxic and radioactive substances demands serious study and public consideration as many of the affected creeks are now day lighted and openly flow through public and residential areas.

The LBNL facility, including the Bevatron site, is laced with underground plumes of many types of hazardous and radioactive substances which the Department of Energy and Laboratory officials have promised to clean up as soon as funding can be secured. Some of these plumes are already leaching into Berkeley's creeks and are threatening the sub-surface water systems, which are the emergency reserve water for Berkeley inhabitants in the event of a loss of supply from our prime sources. The more these plumes spread the more costly they will be to clean up.

LBNL has acknowledged that with all the recent and current construction underway, there is no replacement project planned for the Bevatron site. It is disingenuous for Lab officials to delay promised toxic plume clean-ups for lack of funding and then spend \$85 million on a low priority and dangerous demolition of a facility of historic and architectural interest to many. LBNL must think so also as they included the Bevatron's design on their logo.

M/S/C (*McDonald, sorgen*) adopt a Resolution (ATTACHMENT A) recommending that the City Council requests that the Department of Energy, the Lawrence Berkeley National Laboratory and their managing agency, the University of California, continue with their original plan to preserve the Bevatron Facility as a place of merit on the National Register of Historic Places for the benefit of future interested individuals and students of science, history, and architecture. Further that the City Council request that the \$85 million budgeted for the demolition of the Bevatron be mostly redirected to the decontamination of toxic underground plumes at LBNL as promised with enough spared to complete the conversion of the accelerator facility for safe public access. **Ayes:** Beltran, Bohn, Brody, Cohen, Kashner, Litman, McDonald, Seaton, Sherman, sorgen, Wagley, Weddle, Winkelman; **Noes:** Wornick; **Abstain:** Freedkin, Wornick; **Absent:** None.

Commissioners Freedkin and Wornick abstained from the vote because, while they personally support the resolution, as written it does not address justice or peace issues as defined in the ordinance that created the Peace and Justice Commission and therefore not within the purview of this Commission.

FINANCIAL IMPLICATIONS

None.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

RESOLUTION NO. -N.S.

PRESERVING THE BEVATRON FACILITY AS A PLACE OF MERIT ON THE
NATIONAL REGISTER OF HISTORIC PLACES

WHEREAS, it is the function of the Peace and Justice Commission to help create citizen awareness around issues of social justice and develop educational programs for the implementation of the Council (BMC 3.68.070. B), and the Nuclear Free Berkeley Act, BMC Section 12.90.80 E states "The City of Berkeley...shall assist and promote educational activities including but not limited to curriculum in all public schools and adult education programs, to advance public awareness and understanding of work for nuclear weapons and related matters as addressed in this Act"; and

WHEREAS, the Bevatron, an accelerator built in 1954 at Lawrence Berkeley National Laboratory (LBNL), played a critical role in the nation's scientific research efforts which resulted in four Nobel prizes and has historic and educational value for people involved in science, history and architecture; and

WHEREAS, the complex and unique machinery that remains represents the majority of the accelerator, is accessible, in good condition and would be an excellent teaching aid and field trip for students of science, physics, etc.; and

WHEREAS, the large circular structure with a conical roof that houses the Bevatron is also unique and worthy of preservation; and

WHEREAS, the many years of accelerator activity resulted in significant amounts of radioactive materials deep inside the walls, ground and structural elements and these together with many hazardous and toxic substances also buried in the structure would be released during deconstruction and hauling and would best be handled by being allowed to decay in place as recommended by leading environmental experts; and

WHEREAS, toxics, especially radioactive materials, are very hard to dispose of and this disposition will impact yet another community in addition to our own; and

WHEREAS, in 1995, LBNL requested and received eligibility status on the National Register of Historic Places for the Bevatron facility from the Office of Historic Preservation, State of California; and

WHEREAS, the complex geology and hydrology of the Bevatron site require a comprehensive and public analysis of the impact of the demolition upon Berkeley's creeks, air, soil, and emergency water systems; and

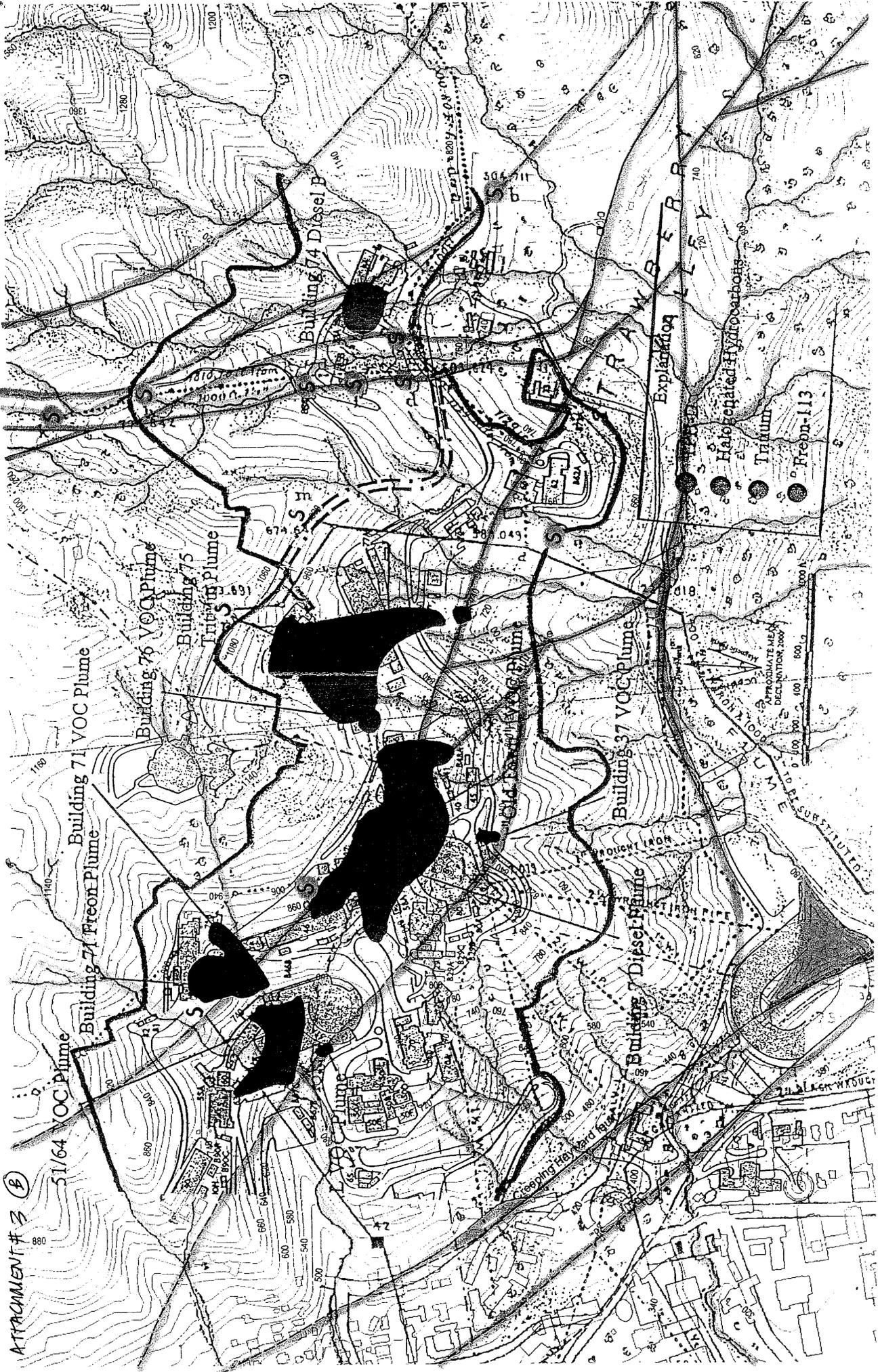
WHEREAS, LBNL has promised to clean up other hazardous and radioactive plumes on its site when funding was available; and

WHEREAS, the Department of Energy has budgeted \$85 million for demolishing the Bevatron even though there is no need or plans for a replacement project.

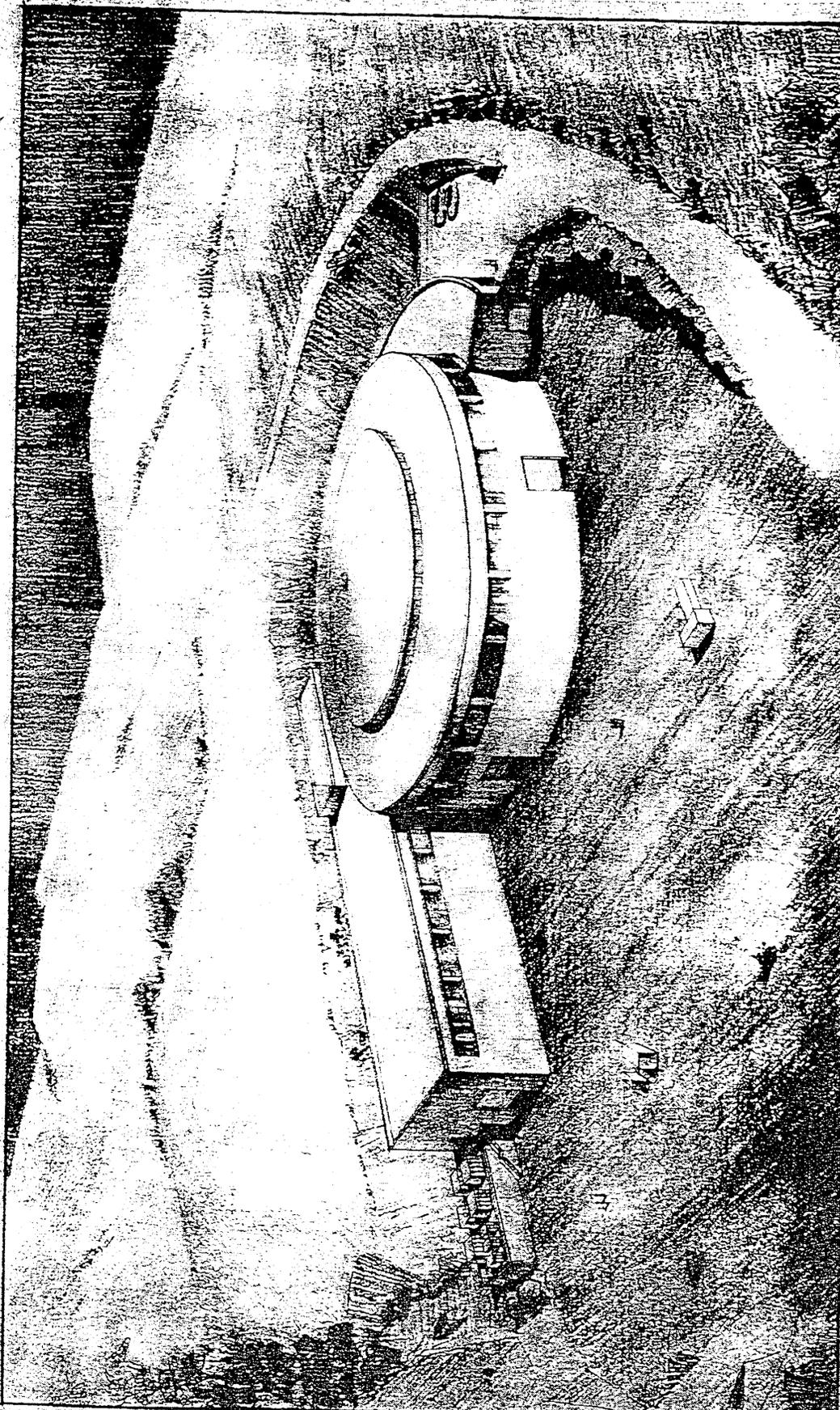
NOW THEREFORE BE IT RESOLVED, that the Council of the City of Berkeley requests that the Department of Energy, the Lawrence Berkeley National Laboratory and their managing agency, the University of California, continue with their original plan to preserve the Bevatron Facility as a place of merit on the National Register of Historic Places for the benefit of future interested individuals and students of science, history and architecture.

BE IT FURTHER RESOLVED, that the Council of the City of Berkeley requests that the \$85 million budgeted for the demolition of the Bevatron be mostly redirected to the decontamination of toxic underground plumes at LBNL as promised with enough spared to complete the conversion of the accelerator facility for safe public access.

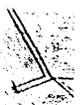
ATTACHMENT # 3 (B)



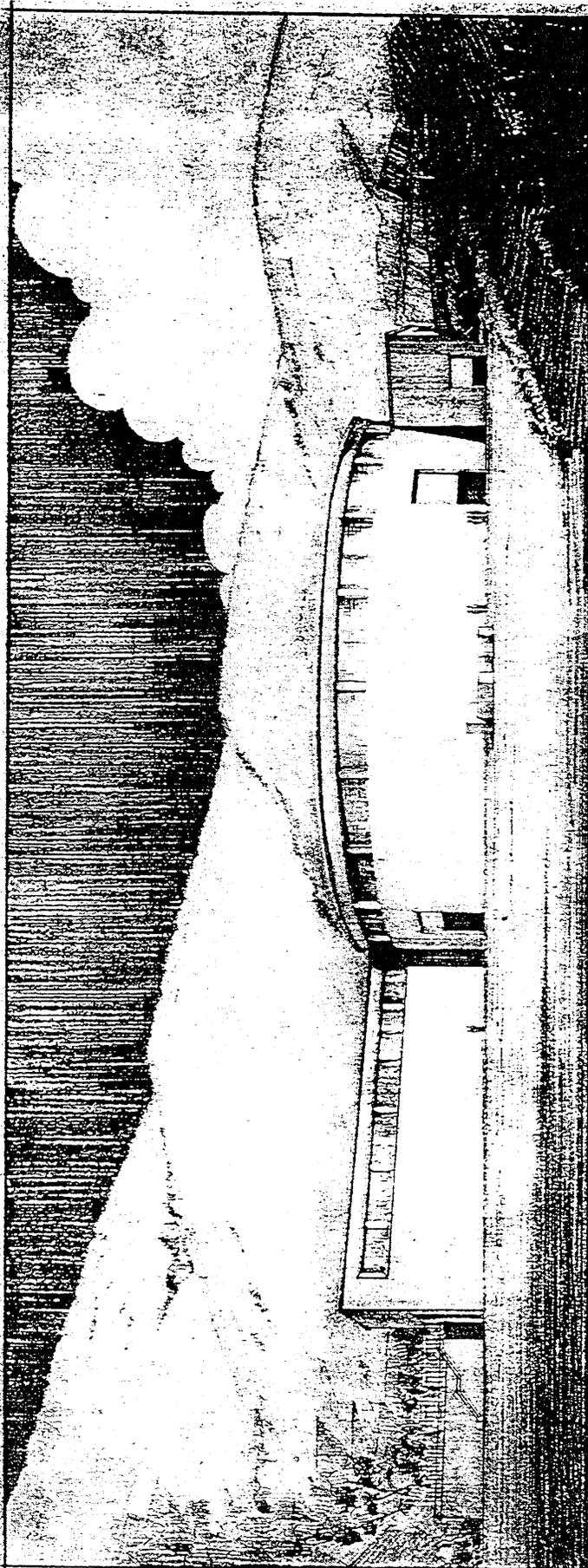
HAER No. CA-186-A-38



PRELIMINARY DRAWINGS
UNITED STATES ATOMIC ENERGY COMMISSION
BEVATRON BUILDING
UNIVERSITY OF CALIFORNIA AT BERKELEY
LABORATORY BUILDING NOS. 1
HASTINGS, MURDO ARCHITECTS
522 POWELL ST. SAN FRANCISCO, CALIF.
DATE 11/1/54



HAER No. CA-186-A-39

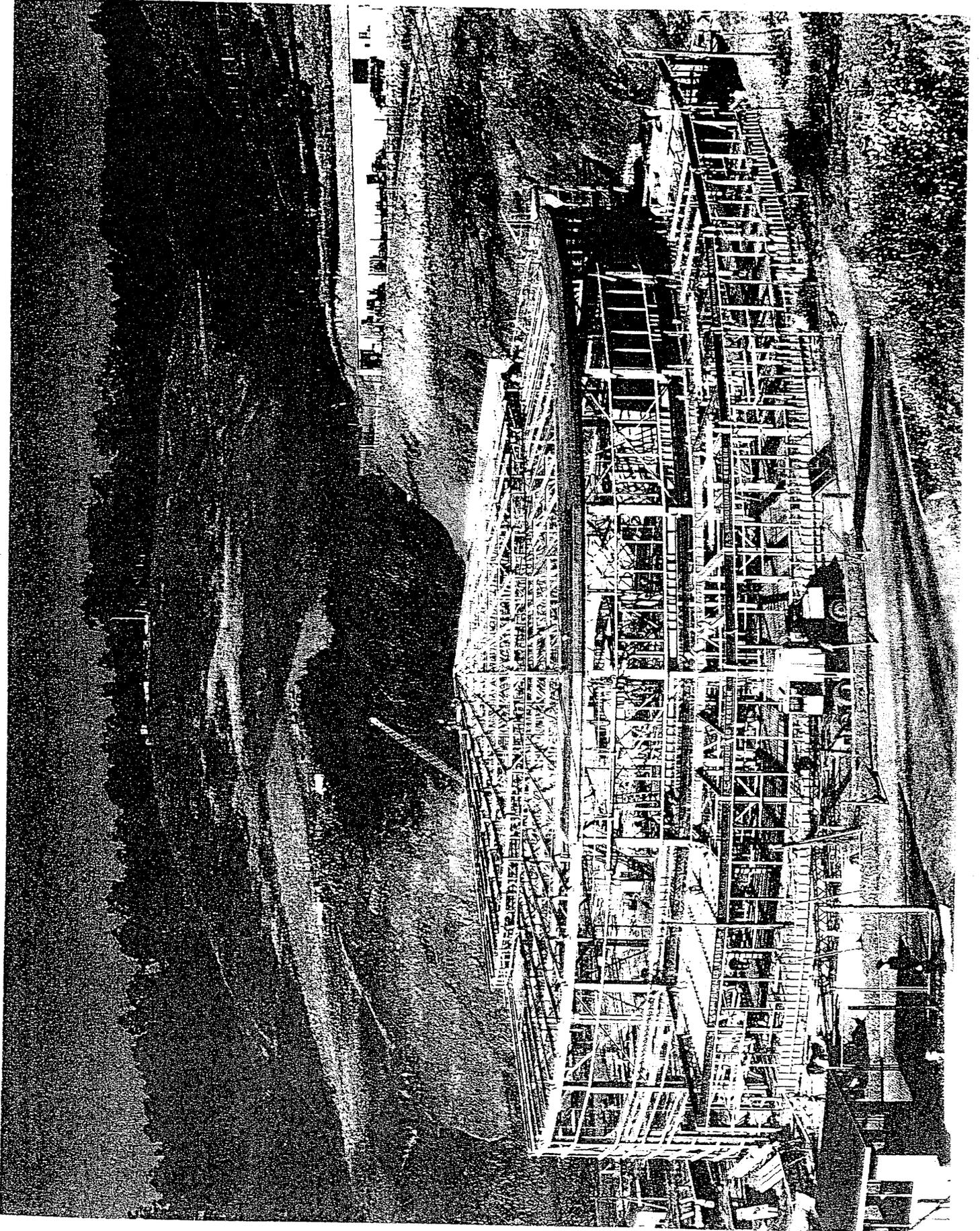


PRELIMINARY DRAWINGS
UNITED STATES ATOMIC ENERGY COMMISSION
SAVATRON BUILDING
UNIVERSITY OF CALIFORNIA AT BERRILLY
RADIATION LABORATORY BUILDING NO. 51
MASTAN & MURD ARCHITECTS
520 POWELL ST. SAN FRANCISCO, CALIF.

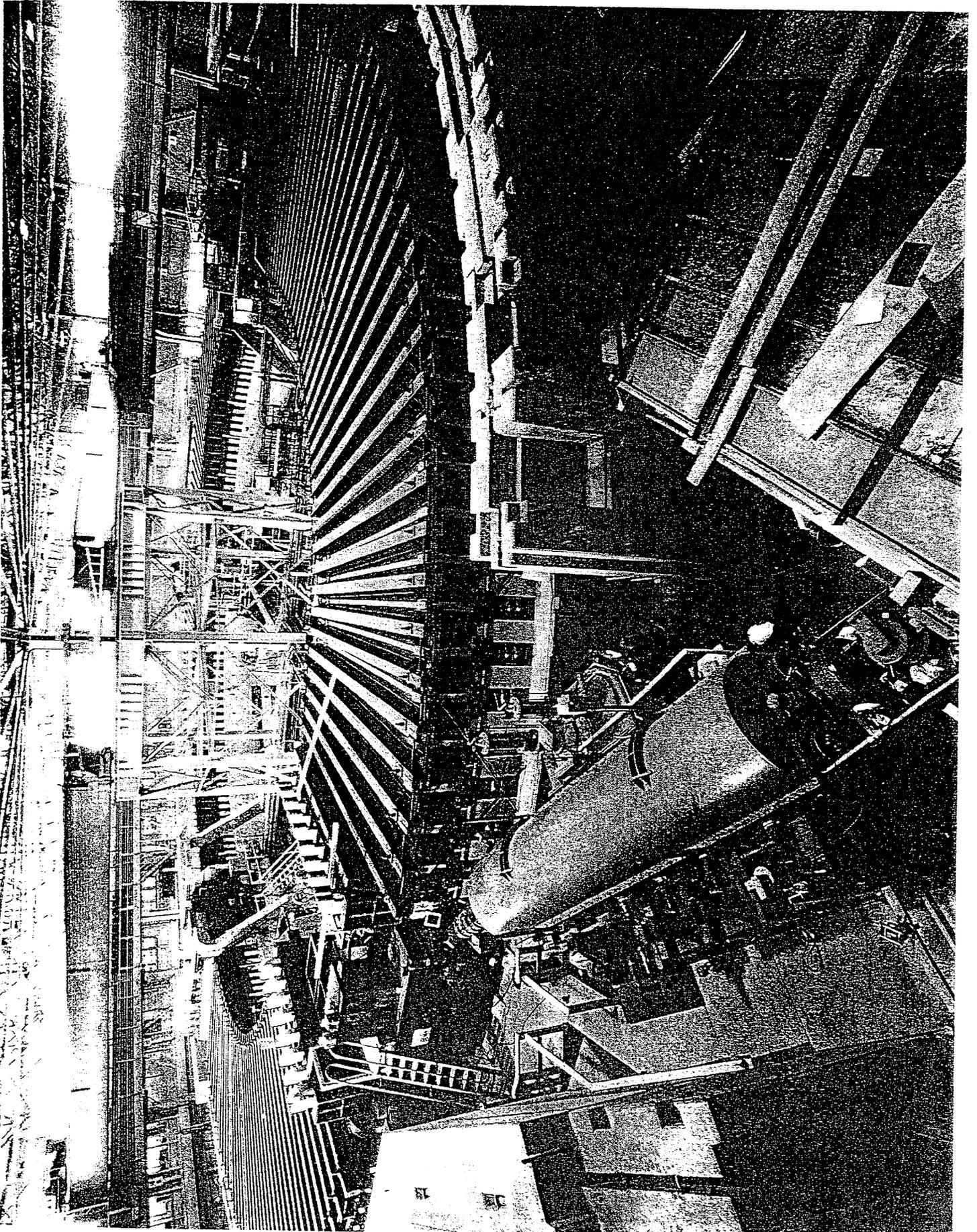
OFFICIAL RECORD
No. _____

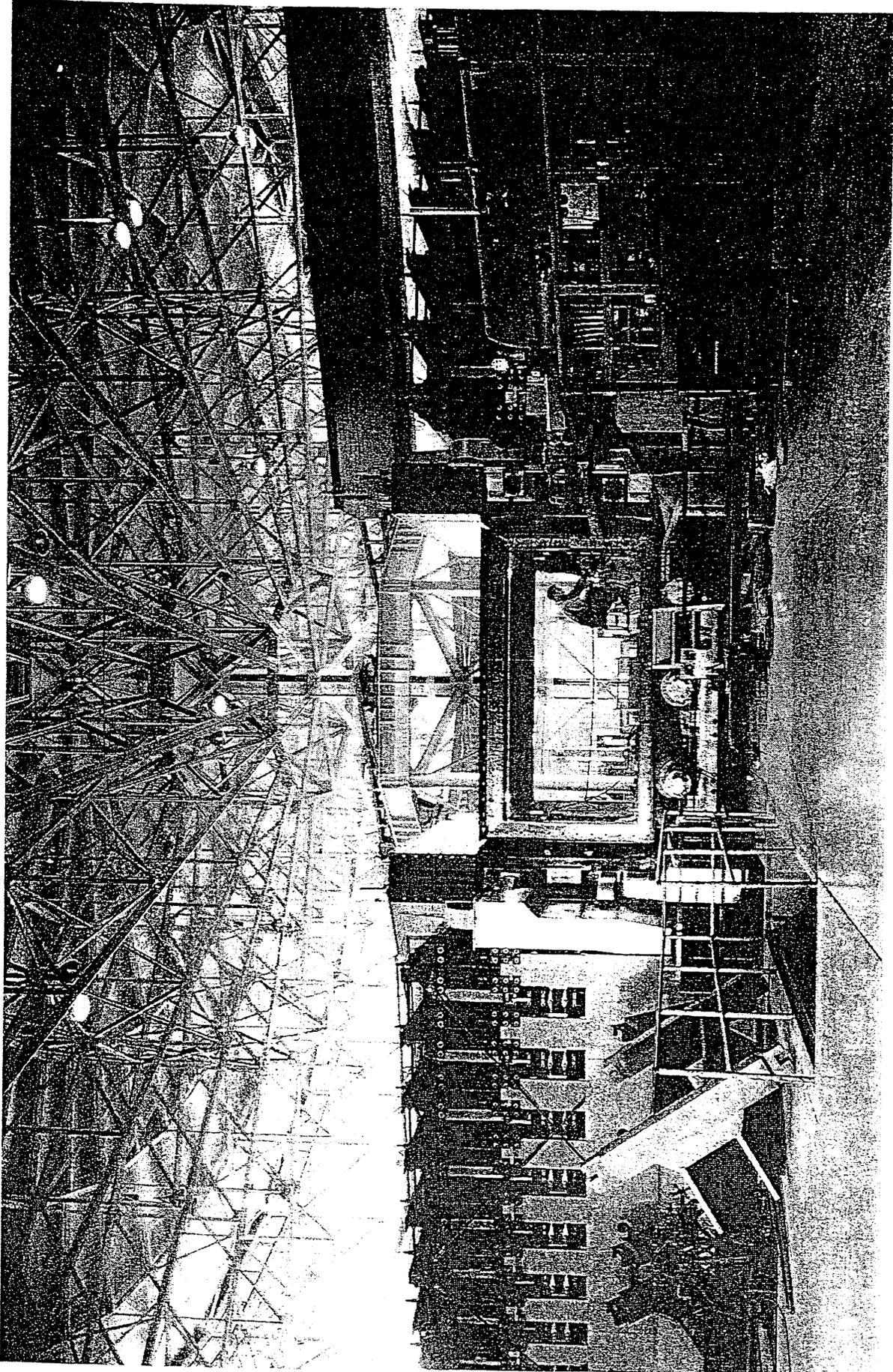


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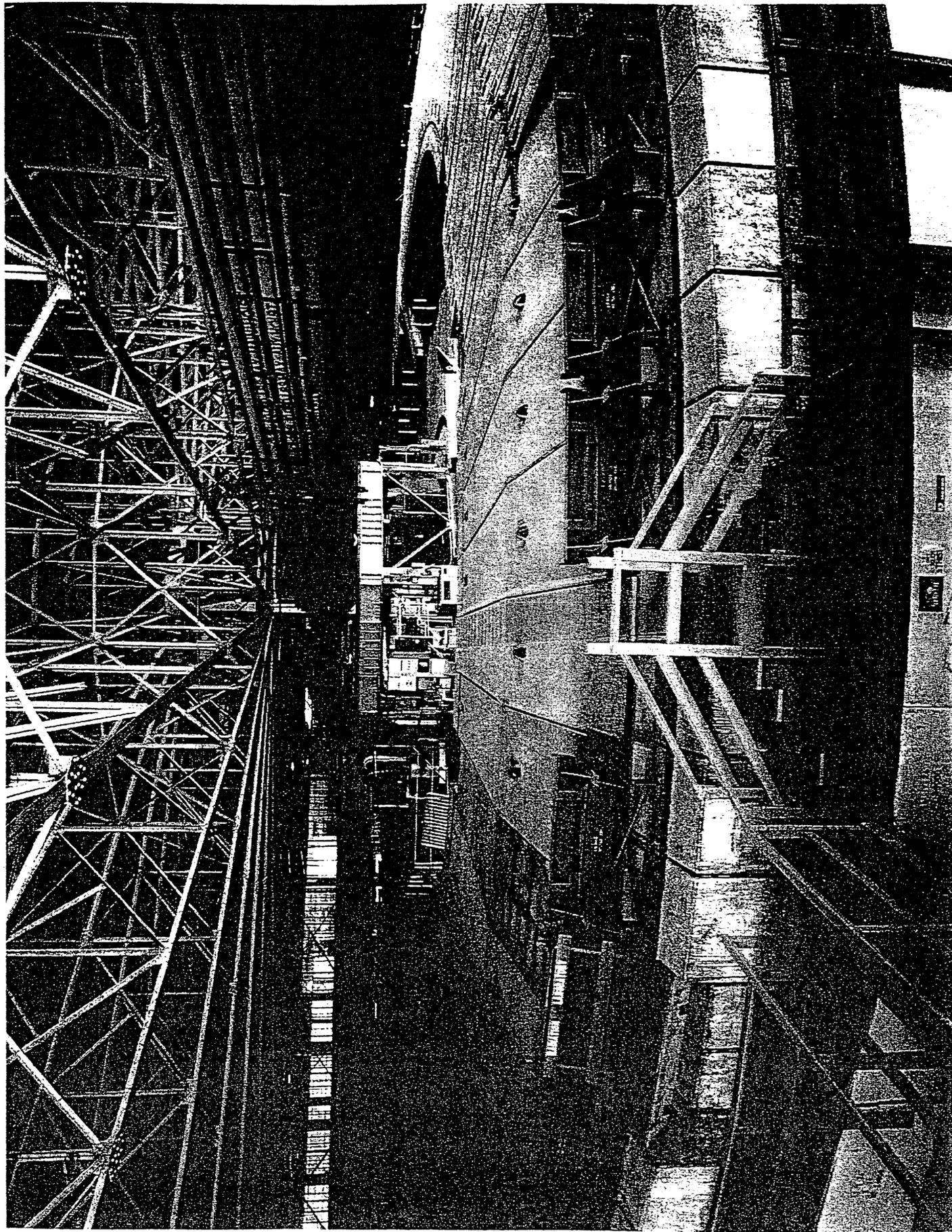


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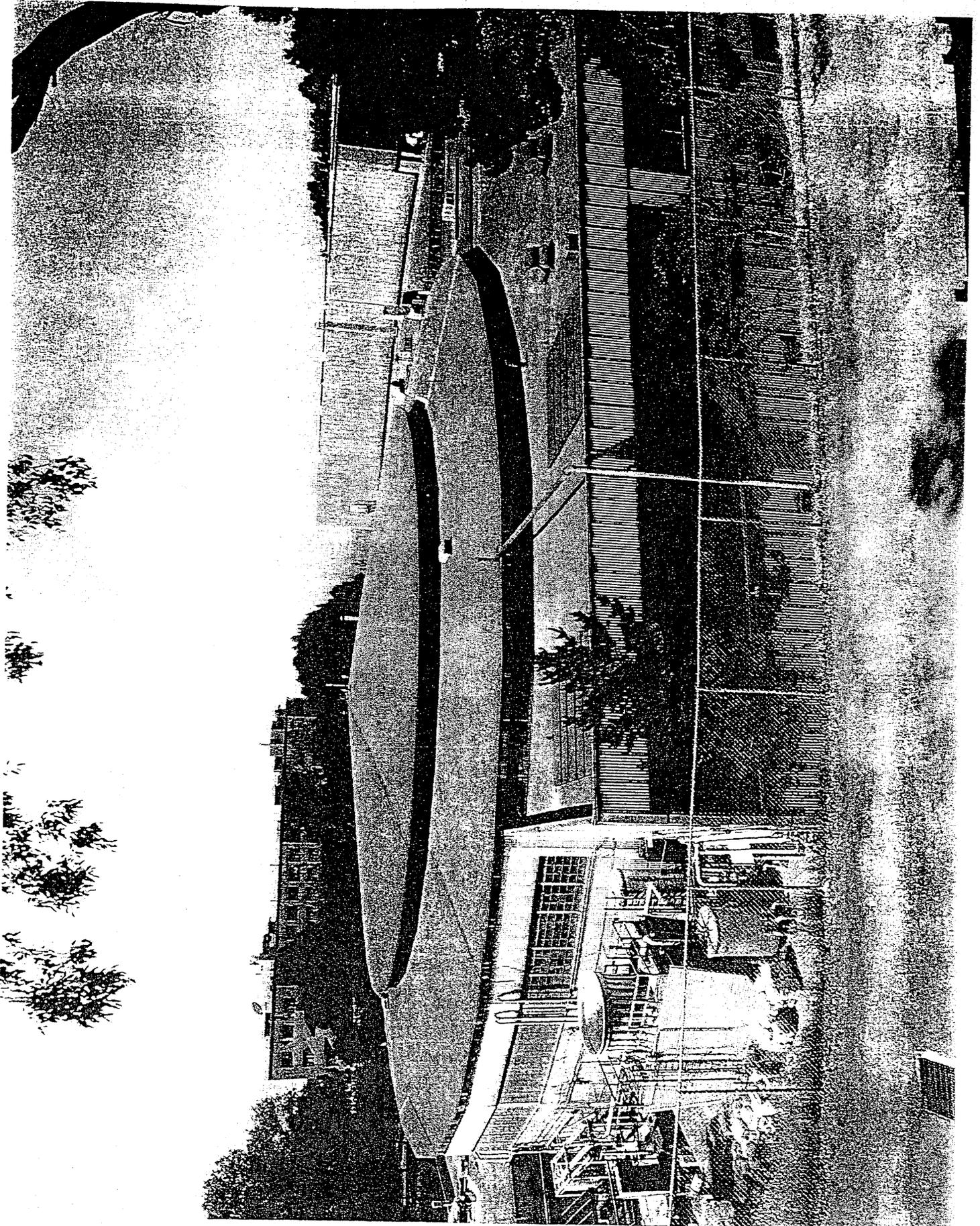




HAER No. CA-186-A-71

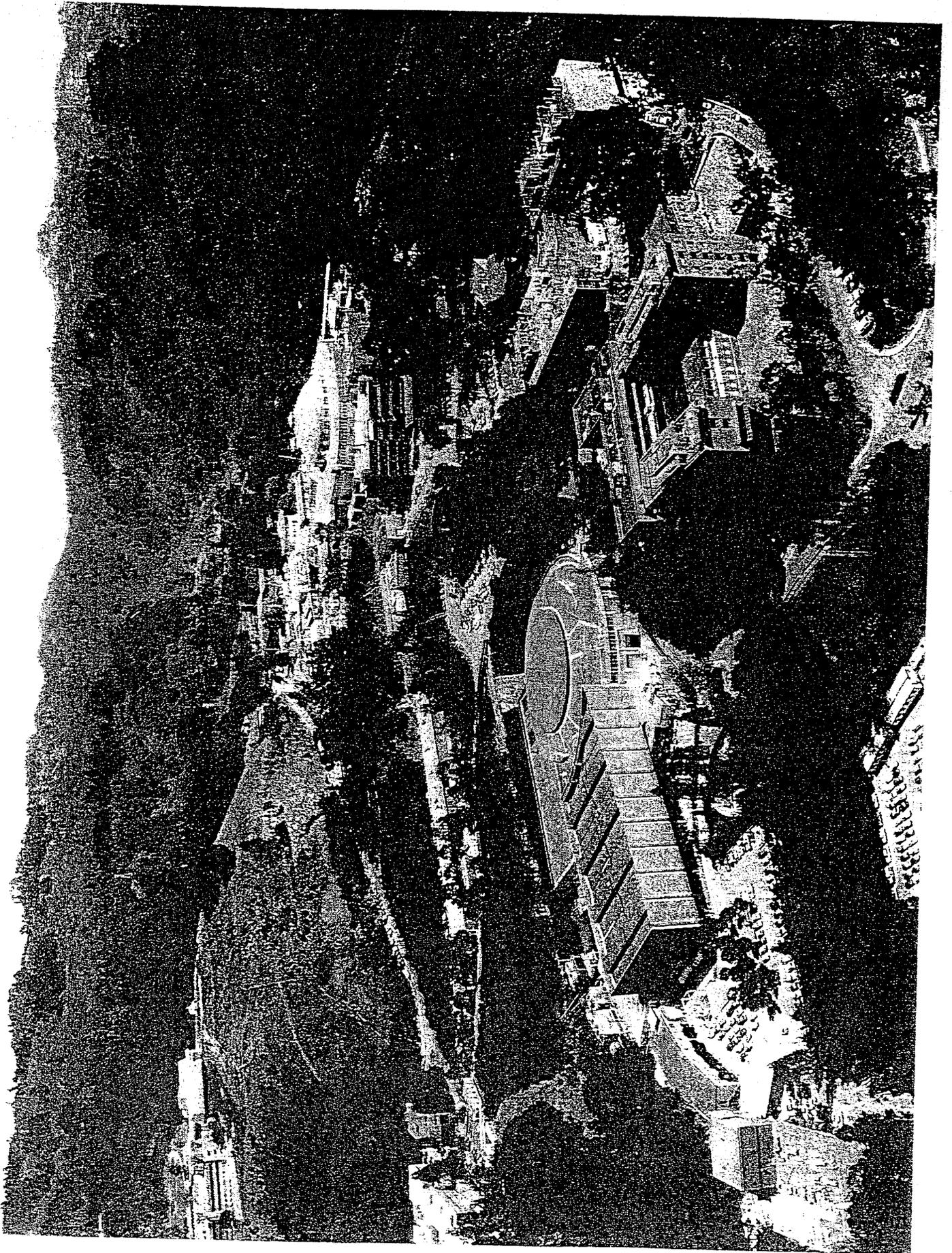


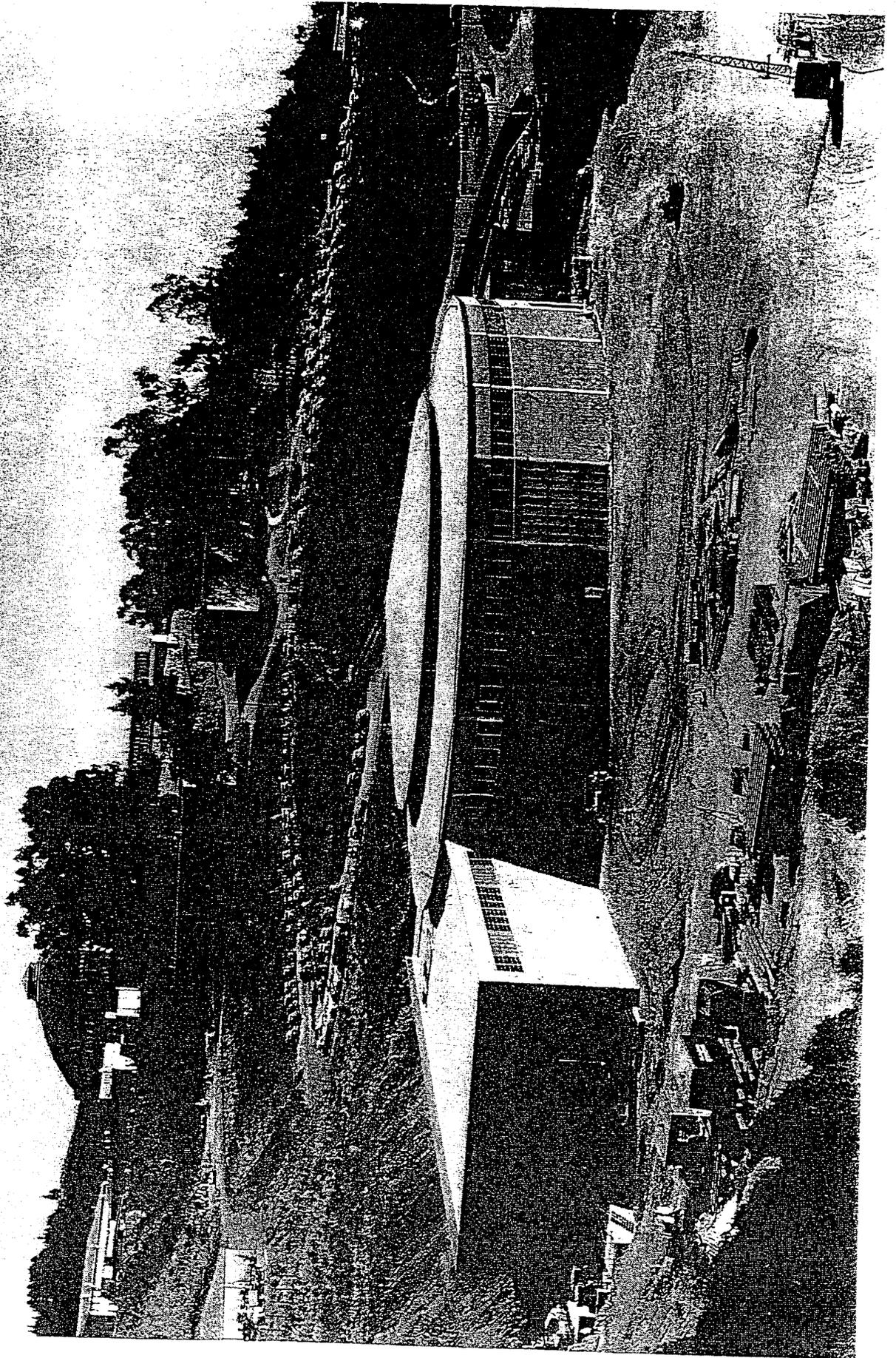
HAER No. CA-186-A-69



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. CA-186-A-61





D Thompson / J Sharp – 2663 Le Conte Avenue Berkeley CA
94709 – 510/644-9344

7 December 2005

Daniel Kevin
Environmental Planning Group
Lawrence Berkeley National Laboratory
One Cyclotron Road MS 69R0201
Berkeley CA 94720

Re: Building 51 and Bevatron Demolition DEIR

Dear Mr Kevin:

We strongly feel that LBNL's Demolition of Building 51 and the Bevatron Draft Environmental Impact Report (DEIR), released 21 October 2005, is a premature document.

For three reasons, we think the DEIR should be withdrawn and re-circulated after the Lab releases its new Long Range Development Plan (LRDP), first announced in a Notice of Preparation over five (!) years ago.

- TS-1 | 1. The Bevatron Demolition project involves the removal and transportation of a significant volume of hazardous and radioactive materials. It will involve thousands of truck trips along heavily populated City of Berkeley streets over a four-to-seven year period, if we can believe the estimates.
- TS-2 | 2. Though it is not articulated in the DEIR, demolition of the Bevatron and Building 51 looks to us like the first stage of new major construction on that site. We sincerely doubt that the Lab would spend over \$80m just for a native-grass restoration project. CEQA case law discourages project piecemealing, as you must know.
- TS-3 | 3. Because of the project's hazardous nature and long time horizon, we believe it is in the best interest of both the University of California and the Department of Energy to tier the project off a

TS-3

fresh LRDP with the most up-to-date mitigations possible. In our judgment, it is not reasonable for a project which may not be completed until 2013 (and likely followed by another long construction period) to use a twice-amended 1987 LRDP as its framework.

Please withdraw the DEIR and re-circulate it after the new LRDP is available.

Sincerely,

Daniella Thompson James M Sharp

Mr. Daniel Kevin
Environmental Planning Group
Lawrence Berkeley National Laboratory
One Cyclotron Road
Mail Stop 90K0198
Berkeley 09720

7 December 2005

Re: Comments on the Demolition of Building 51 and the Bevetron

Dear Mr. Kevin,

I would like to start by commending the Laboratory for the excellent quality of the draft EIR. Your consultant is to be commended for compiling a well written and thorough document. I am not in favour of preserving either the Bevetron or Building 51. However, I do have a few general comments.

- DS-1 | Mention is made of a future Long Range Development Plan, but no date is given nor an indication of whether or not a structure at the site would be part of this plan. It would be helpful to include a statement indicating how the site will be incorporated into the next phase of development. (IV.C-19)
- DS-2 | Federal EPA has various definitions of "background" depending on the location. Given prior activities at the site, specific identification of background levels would assist in determining exposure risk. (IV.F-9)
- DS-3 | Rubbling would be a most preferred disposal method. There is no discussion of the possibility of off-site rubbling to lessen exposure to Laboratory personnel and the surrounding community. Has this been considered and if so could that be stated? (IV.8 and V-8)
- DS-4 | The discussion of contaminant exposure does not discuss the possible exposure to contaminants in the groundwater plume under the building during discussion of the foundation removal. Is the plume well below the excavation area?

Thank you for allowing me to comment on this document.

Yours



Ms. Dale Smith

Environmental Commissioner, Treasure Island Restoration Board
Environmental Commissioner, Alameda Naval Air Station Restoration Board, Sierra Club and
Audubon representative



DALE SMITH
2935 Otis Street
Berkeley California 94703
510-841-2115

