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June 25, 2003

**ACTION UNDER PRESIDENT'S AUTHORITY--AMENDMENT OF THE BUDGET FOR
CAPITAL IMPROVEMENTS AND THE CAPITAL IMPROVEMENT PROGRAM AND
APPROVAL OF EXTERNAL FINANCING FOR ELECTRICAL INFRASTRUCTURE
RENEWAL – PHASE I, SANTA BARBARA CAMPUS**

It is recommended that:

Pursuant to Standing Order 100.4(q)

- (1) The President amend the 2002-03 Budget for Capital Improvements and the Capital Improvement Program to include the following changes:

Santa Barbara: Electrical Infrastructure Renewal – Phase I - preliminary plans, working drawings, and construction -- \$3,449,000 to be funded from external financing.

Pursuant to Bylaw 21.4(d) and Standing Order 100.4(nn)

- (2) The President be authorized to obtain financing not to exceed \$3,449,000 to finance the Electrical Infrastructure Renewal – Phase I project, subject to the following conditions:
 - a. Interest only, based on the amount drawn down, shall be paid on the outstanding balance during the construction period;
 - b. Repayment of the debt for the Electrical Infrastructure Renewal – Phase I shall be from the Santa Barbara campus' share of the University Opportunity Fund; and
 - c. The general credit of The Regents shall not be pledged.
- (3) The Officers of The Regents be authorized to provide certification to the lender that interest paid by The Regents is excluded from gross income for purposes of federal income taxation under existing law.
- (4) The Officers of The Regents be authorized to execute all documents necessary in connection with the above.

A Key to abbreviations and the project description are attached.

KEY
Capital Improvement Program Abbreviations

S	Studies
P	Preliminary Planning
W	Working Drawings
C	Construction
E	Equipment
-	State (no abbreviation)
F	Federal Funds
G	Gifts
HR	Hospital Reserve Funds
I	California Institutes for Science and Innovation
LB	Bank Loans or Bonds (External Financing includes Garamendi, Bonds, Stand-By, Interim and Bank Loans)
LR	Regents' Loans (Internal Loans)
N	Reserves other than University Registration Fee (Housing and Parking Reserves)
R	University Registration Fee Reserves
U	Regents' Appropriations (President's Funds, Educational Fund)
X	Campus Funds
CCCI	California Construction Cost Index
EPI	Equipment Price Index

2002-03 Budget for Capital Improvements
and Capital Improvement Program
Scheduled for Regents' Allocation, Loans, Income Reserves,
University Registration Fee Reserves, Gift Funds, and Miscellaneous Funds

Campus and Project Title (<u>Total Cost</u>)	Proposed <u>2002-03</u>
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Santa Barbara

Electrical Infrastructure Renewal	P	182	LB
Phase I	W	116	LB
	C	3,151	LB

(\$3,449,000)

DESCRIPTION

The Santa Barbara campus proposes to implement Phase I of a master plan for conversion of the electrical infrastructure system to a standard 12 kV ⁽¹⁾ distribution system with a new substation featuring two transformers with a combined capacity of 44 MVA ⁽²⁾. Phase 1 would be completed at a cost of \$3,449,000 and would provide the increase to campus capacity necessary to service several new buildings including the California Nanosystems Institute.

Phase 2 of the master plan will be included in the University's 2004-05 state budget at a total cost of \$15,817,000 (\$13,000,000 of state funds, and \$2,817,000 of non-state funds). Phase 1 would meet the most urgent near-term requirements resulting from substantially increased space, while Phase 2 would meet long-term needs and create efficiencies by converting to a 12 kV system.

Background

In the spring of 2001, campus Physical Facilities retained a consultant to conduct a study of the campus electrical capacity and distribution system; including review of various factors such as capacity, age and condition, system reliability, efficiency, and serviceability. Ove Arup & Partners and UCSB Physical Facilities in April 2002 completed this study. The principal findings are as follows:

- The primary SCE 16kV distribution circuit (the "A" circuit) was loaded at 84% of its rating. The "B" circuit, while currently loaded at less than half capacity, can not provide service to the new buildings because of limited switching capabilities.
- The University's entire 4kV distribution system is also served from SCE's "A" circuit, and would be down as a result of an outage on the "A" circuit.
- There is no backup if the substation transformer were to experience an outage. The campus would be without power until the outage was repaired.

- Similarly, the electrical distribution system does not have a viable backup process or loop system in the event of an outage anywhere on the system. Thus, the entire campus would be impacted by a problem with either one of the existing circuits.
- 90% of the “A” and “B” systems were installed over 30 years ago; industry standards for life span for underground utilities with proper maintenance are estimated at 35 years. In addition, maintenance over the life of the system has been minimal and its overall condition is poor.
- UCSB’s approved growth in large capital projects will require an additional 7.25 MVA of electrical load capacity. The University is currently fed through one substation, which has a 22 MVA capacity. The campus currently has a 15 MVA peak demand; by 2007, with a peak load estimated to be 23 MVA, the existing substation will be overloaded.
- The SCE 16kV supply system does not meet current industry standard; replacement of the entire system over time should be to an industry standard 12kV system. All other UC campuses except Santa Barbara own and operate their own 12kV systems.
- Conversion of ownership, operation, and maintenance from SCE to the University to run its own 12kV system would eliminate costly SCE “value-added” capital costs from installation, replacement, and maintenance of system components, equipment, and cabling.

Project Description

Based on the results of the 2002 study, the University needs to install a new 22 MVA transformer and two new 12.47 kV distribution circuits. The circuits would be routed in existing University-owned conduits to allow connection to new facilities and conversion of existing buildings. The new circuits would also be configured in a looped system by utilizing a recently upgraded 4kV circuit to ensure reliable power in the event of a system failure. This project would also begin the process of converting the campus electrical infrastructure system to a University-owned, industry standard system and would accommodate short-term, approved campus capital growth.

Phase I of the total electrical system renewal involves the installation of a new 22 MVA transformer at the substation, and provision of two express feeder lines; one from the substation west of parking lot 30 along Mesa Road through the west side of the campus ending at the new Life Sciences Building site at Lagoon Road; and one south through the athletic fields east of Robertson Gym to Ocean Road. The west side feeder would connect to existing circuit 4B, which has been upgraded to be operated at 12.47kV, and several buildings (Bldgs 503, 525, 533, 535, 546, 551, 565 and 575) would be converted to 12kV to allow implementation of a redundant loop system. The project would remove old cabling from existing conduits in order to route new cable, replace various building switches to further isolate risk of fault, and replace aging conductors.

Implementation of this project would provide new transformer capacity and new feeder lines to existing buildings and new project sites online in the next few years, including the Engineering Sciences building, Marine Sciences building, Nano-Sciences (CNSI) complex, Psychology addition, ICA building, Recreation Center addition, and Life Sciences building.

Based on a project schedule providing implementation by the end of 2003, and a projected master plan schedule calling for additional electrical system construction phases initially funding in FY 2004-5, Phase I improvements provide the needed capacity and ability to connect to new feeder lines for the anticipated growth of the campus in the northwest area where without implementation, the electrical system would be overloaded. Construction would start in August 2003 and be complete in March 2004.

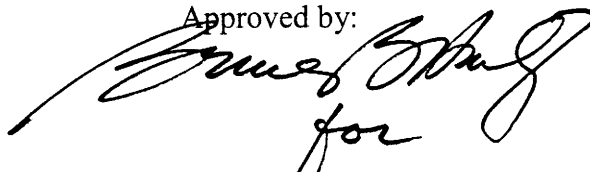
CEQA Classification

In accordance with the California Environmental Quality Act and University of California procedures for the implementation of CEQA, the proposed project is Categorically Exempt under Article 19, Section 15301, Class 1, Existing Facilities and Section 15303, New Construction Small Structures.

Financial Feasibility

The total project cost of \$3,449,000 at CCCI 4059 would be funded from external financing at 5.75% for 15 years and the estimated annual debt service is \$349,350. Repayment for the Electrical Infrastructure Renewal – Phase I debt would be from campus Opportunity Funds. Opportunity Funds are a portion of the indirect cost recovery generated by federal contracts and grants. By University policy, up to 65% of the campus' total Opportunity Funds may be pledged for debt service, but only up to 33% of actual debt service may be paid from Opportunity Funds. In fiscal year 2005-06, the first full year of principal and interest payments, 50% of Opportunity Funds are pledged for debt service. Inclusive of this amount for the external financing, the campus is within the prescribed Opportunity Fund pledge and payment limits. Additional financial feasibility information may be found on Attachment 2.

Approved by:



Richard C. Atkinson
President of the University

Date

Attachments

PROJECT STATISTICS
ELECTRICAL INFRASTRUCTURE RENEWAL – PHASE I
CAPITAL IMPROVEMENT BUDGET
SANTA BARBARA CAMPUS
CCCI 4059

<u>Cost Category</u>	<u>Amount</u>	<u>% of Total</u>
Site Clearance		
Building	\$2,785,000	80.7%
Exterior Utilities		
Site Development		
A/E Fees ^(a)	250,000	7.2%
Campus Administration ^(b)	120,000	3.5%
Surveys, Tests	25,000	0.7%
Special Items ^(c)	168,000	4.0%
Contingency	<u>100,000</u>	<u>2.9%</u>
Total	\$3,449,000	100.0%
Group 2 & 3 Equipment	<u>0</u>	
Total Project	\$3,449,000	

SUMMARY FINANCIAL FEASIBILITY ANALYSIS

Project Title: Electrical Infrastructure Renewal – Phase I

Total Estimated Project Cost: \$ 3,449,000

Proposed Source of Financing
 External Financing \$ 3,449,000

Projected Financing Terms:

Interest Rate: 5.75%
 Duration: 15 years
 Annual Debt Payment: \$ 349,350

Santa Barbara Opportunity Fund Information (2005-06)*

Opportunity Fund Allocation \$ 6,636,000
 Garamendi 1,910,000
 Total \$ 8,546,000

Estimated Average Annual Debt Service

Proposed Project \$ 349,350
 Garamendi 1,910,000
 Other projects yet to be approved** 337,000
 Other Approved Projects 1,676,000
 Total Estimated Debt Service \$ 4,272,350

% Opportunity Fund Pledged for Debt (policy limit 65%) 50.0%

Debt Service Coverage 1.55

* First year of principal and interest payments for the project.

** Other projects to be presented for approval