University of Toronto

Office of the Assistant Vice-President, Space and Facilities Planning

TO: Planning and Budget Committee

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AGENDA ITEM: 7

Project Planning Report for Electrical and Mechanical Infrastructure Upgrades Phase 5: A. Boiler Controls, B. New Generator and C. PCB Transformers at the University of Toronto at Scarborough.

JURISDICTIONAL INFORMATION:

Under the *Policy on Capital Planning and Capital Projects*, the Planning & Budget Committee considers annual infrastructure renewal plans and, from time to time, special projects which address extraordinary and/or urgent needs to support the infrastructure of the University.

PREVIOUS ACTION TAKEN

The Campus Master Plan for UTSC was approved in May, 2001, identifying a plan for campus development which included the construction of several new buildings to accommodate projected increases in student enrolment. The existing electrical and mechanical infrastructure was assessed to evaluate their capacity and condition. The consultants identified several potentially critical conditions and deficiencies, and made recommendations for replacement and upgrading of these systems to ensure dependable service for the foreseeable future. In response, the UTSC developed a multi-phase plan to replace and upgrade the infrastructure at UTSC. This plan is detailed in the Project Planning Report, which has been before this Committee for approval of earlier phases.

The multi-phase plan identified a defined set of high priority projects that required immediate attention. Projects identified as Phases 1A, 1B, 2A and 2B are tabulated below and have previously been reported to Planning and Budget in the regularized annual AFD reporting as required by policy. Phases 3 and 4 have been approved by the Planning and Budget Committee as they each exceeded the $2 million limit for projects considered by AFD. All approved reports are available upon request.

AFD Approval	Phase	Project Title	Cost of the Project
May 9, 2003	Phase 1A	Electrical Distribution Switch	$ 451,000
January 30, 2004	Phase 1B	De-aerator for heating / Asbestos	$1,675,000
January 30, 2004	Phase 2A	Electrical Distribution and Indoor/ Outdoor Switchgear Replacement	$1,660,000
January 30, 2004	Phase 2B	Mechanical Infrastructure – New Boiler / Asbestos	$1,505,000

Planning and Budget Approval	Phase	Project Title	
December 2004	Phase 3	Cooling Towers	$2,515,000
September 2005	Phase 4	New Chiller	$2,919,000

HIGHLIGHTS:

Numerous infrastructure needs related to both the electrical and mechanical systems at UTSC have required urgent attention in the past 36 months and extensive construction has occurred on the UTSC campus, with each of the five new major buildings requiring adequate electrical and mechanical services to ensure effective operation. A considerable portion of these expenditures relate to the additional demands of the new buildings as well as the replacement of systems that partially address deferred maintenance issues. Phase 5, is required by the New Science Building

FINANCIAL AND/OR PLANNING IMPLICATIONS:

UTSC has already directed a total of $10,725,000 towards Phases 1, 2 3 and 4 of the initially projected $17.351 million infrastructure upgrades plan at UTSC. The three separate projects which constitute Phase 5, the boiler controls, diesel generator and PCB transformers, will require an additional $4,530,000. Funding for Phase 5 is as follows:
UTSC New Science Building Project, the Enrolment Growth Fund and UTSC's Operating Deferred Maintenance Funds.

UTSC New Science Building Project	$3.785 m
Enrolment Growth Fund	$.320 m
Deferred Maintenance Funds	$.425 m
Total	$4,530,000

The implementation of Phase 4 (previous approval) reduced the overall number of phases of infrastructure upgrades from the six identified in the Phase 4 Report to five and reduces the original projected total cost of the upgrades of $17.351 reduced in Phase 4 to $15.672, further to $15.255 million. These changes are possible because Phase 5C, replacement of PCB transformers has made Phase 6 unnecessary. Approval of the project is required now to allow for heating and emergency power backup for the New Science Building scheduled to open in January 2008, as well as meeting the federal legislation regarding PCB removal. The work will be implemented in the 2006-07 fiscal year. (Table 1 attached)

IMPACT ON THE CAPITAL PLAN EXPENDITURES:

No borrowing of funds has been directed to this phase of the project or the previous phases. The need for these infrastructure upgrades is absolutely necessary to support the new Science Buildings at UTSC addressed within the Capital Plan.

RECOMMENDATIONS:

That the Planning and Budget Committee recommend to the Academic Board:

1. THAT the Project Planning Report for the Electrical and Mechanical Infrastructure Upgrades at the University of Toronto at Scarborough, Phase 5, comprising the replacement of the existing electronic controls for the two existing boilers, the replacement of the existing 200kw diesel generator, and the replacement of the 6 existing PCB transformers be approved in principle at an estimated total project cost of $4.530 million.

2. THAT the following sources of funding for the UTSC Phase V Infrastructure be approved:
   a) Funding identified for the new UTSC Science and provided by the UTSC operating budget — $3.785 million
   b) Enrolment Growth Fund — $ .320 million
   c) Deferred Maintenance Funds — $ .425 million

	Timing	Description	Est Cost	Funding Comments
Phase IA	2003-04	New electrical distribution switch Sub-total	$0.451m **$.451m**	Actual Sources $0.451 Centennial Lease $0.451m
Phase 1B	2003-04	De-aerator for heating Asbestos removal **The above work is complete.** Sub-total	$1.543m $0.132m **$1.675m**	$0.025 Mgmnt Bldg $0.233 Student Centre $0.047 Phase 4 Res $1.238 Centennial Lease $132K ARC savings $1.675m
Phase 2A	2004-05	Electrical distribution and outdoor Switchgear replacement Indoor Switchgear replacement **This work is complete.** Sub-total	$1.256m $0.404m **$1.660m**	Actual Sources $0.200m Managmt Bldg $0.800m Student Centre $0.500m Arts Bldg $0.160 m FRP 03-04 $1.660m
Phase 2B	2004-05	New boiler for heat to Student Centre and Management Buildings Asbestos Removal **This work is complete.** Sub-total	$1.470m $0.035m **$1.505m**	Actual Sources: $0.040m FRP 03-04 $0.916m UTSC 04-05-Operating $0.200m FRP 04-05 $0.349 Central Def Maint Base 04-05 $1.505m
Phase 3	2005-06	New Cooling Towers **This work is complete.** Sub-total	$2.515m **$2.515m**	Actual Sources: $1.218m UTSC 04-05 Operating $0.500m UTSC 05-06 Operating $0.597 m UTSÇ deferred maintenance $0.200m FRP 05-06 $2.515m
Phase 4	2006-07	New 1700 Ton Chiller **This work will be completed by June 2006** Sub-total	$2.919 **$2.919m**	Actual Sources: $1.205m Operating Deferred Maintenance 05-06 $1.514m Operating Deferred Maintenance 06-07 $0.200m FRP 06-07
Phase 5 Provisional	2007-08	Phase 5 A: Replace boiler controls for 2 existing boilers Phase 5 B: Replace existing 200 kW Diesel generator Phase 5 C: Replace 6 existing PCB transformers Sub-total	$0.350m $2.283m $1.897m **$4.530m**	$0.350m Science Building Project 05/06 $2.283m Science Building Project 05/06 $0.320m Provosts EGF 05/06 $0.425m Operating Deferred Maintenance 05-06 $1.152m Science Building Project 05/06
		GRAND TOTAL (estimated)	**$15.255m**	

Table 1: Summary of Phases of Infrastructure Upgrades at UTSC