

UNDERTAKING JT 1.7 Part 1 of 3
(NON-CONFIDENTIAL)

AMPCO Technical Conference Question #3

Ref: Exhibit L/Tab 2/Schedule 13

Ref: Exhibit L/Tab 2/Schedule 12/Table 2a

Exhibit L/Tab 2/Schedule 13 seeks details on a conventional commercial renovation related to a cafeteria recently completed within Pickering. Exhibit L/Tab 2/Schedule 12 Table 2a shows that the project was completed in twice the originally scheduled time and the cost overrun was 46% above the original estimate. OPG's explanation refers to the difficulty of working in a nuclear environment and that "the schedule of the project was driven by the location".

Please provide the original business case, the document upon which the budget overrun was approved, and any follow-up analysis performed related to lessons learned.

Response

The requested documents are appended, as follows:

- Attachment 1: Full Release Business Case Summary (does not contain confidential information)
- Attachment 2: Superseding release of April 2007 (Redacted Non-Confidential)
- Attachment 3: Superseding release of November 2007 (Redacted Non-Confidential)
- Attachment 4: Post-implementation Review of Cafeteria Modifications Project (Confidential)

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| | BUSINESS CASE SUMMARY TEMPLATE | | |

PICKERING ADMINISTRATION BUILDING CAFETERIA MODIFICATIONS
PROJECT NUMBER: 13-25607

1. RECOMMENDATION:

We recommend approval of a full release of \$ 5,215 k and \$ 385 k MFA to allow Nuclear East Facilities to complete the refurbishment of Pickering Administration Building Cafeteria kitchen, server, loading and receiving areas, the upgrading of mechanical and electrical systems serving the new kitchen equipment, and modification of washrooms on the first floor of Administration Building.

| | | | | | | |
|--|----------------|-----------------|--------------|--------------|--------------------|--------------|
| Total Investment Cost: \$ 5,215 k Capital and \$ 385 k MFA (including previous releases of \$ 1,522 k Capital and \$ 120 k MFA) | | | | | | |
| Project Cash Flow (\$k) | | | | | | |
| | Funding | LTD 2005 | 2006 | 2007 | 2008 | Total |
| Currently Release | Capital | 365 | 1,157 | 0 | | 1,522 |
| Currently Release | MFA | 0 | 120 | 0 | | 120 |
| This Release | Capital | (323) | 379 | 3,637 | | 3,693 |
| This Release | MFA | 0 | 37 | 228 | | 265 |
| Total Project Costs | Capital | 42 | 1,536 | 3,637 | | 5,215 |
| Total Project Costs | MFA | 0 | 157 | 228 | | 385 |
| Life to date Expenditure | Capital | 42 | 1,536 | 0 | | 1,578 |
| Life to date Expenditure | MFA | 0 | 157 | 0 | | 157 |
| Investment Type | Class | NPV | | IRR | Discounted Payback | |
| Capital & MFA | Sustaining | (4,504 k) | | N/A | N/A | |

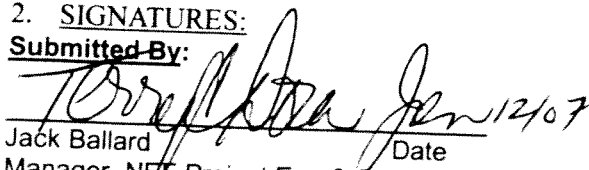
This project is included in the approved 2007-2011 Business Plan

The objective of this sustaining project is to refurbish the existing Cafeteria in order to:

- Address sub-standard health & safety conditions of Cafeteria facilities and kitchen equipment
- Improve functionality and aesthetics of Kitchen/Server by remodelling of floors, walls, & fixtures
- Upgrade existing mechanical & electrical systems associated with Cafeteria modifications
- Improve public image, employee & visitor satisfaction

2. SIGNATURES:

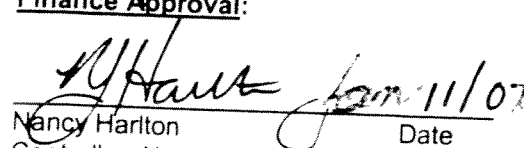
Submitted By:

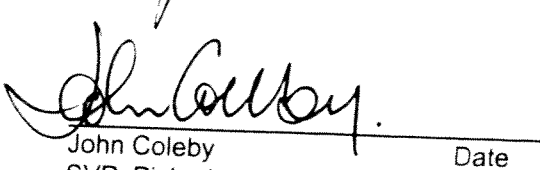

 Jack Ballard Date
 Manager, NEF Project Eng & Support

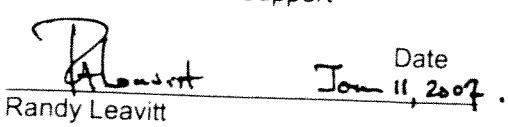
Line Approval:

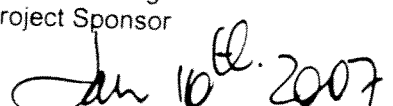

 Terry Doran Date
 Director, Nuclear Integration

Finance Approval:


 Nancy Harlton Date
 Controller, Nuclear Support


 John Coleby Date
 SVP, Pickering A
 Project Sponsor


 Randy Leavitt Date
 Director, Investment Management


 Jan 10th 2007.

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3. BACKGROUND & ISSUES

There have not been any significant improvements made to the cafeteria equipment or aesthetics since the last addition 20 years ago except replacement of some kitchen equipment in 2003. The food service equipment is obsolete, defective, and poses a safety concern (a fire in 2004 has been attributed to old equipment). Cafeteria requires modernization and updating in order to meet the needs of the kitchen staff and customer. In addition, the cafeteria is the focal point as you enter the Administration Building. It needs updating to provide a positive message to visitors entering the building.

The refurbishments include bringing the Kitchen and Server area up to current standards, updating the loading and receiving area, modify exiting washrooms and basement rooms to accommodate the cafeteria upgrade, and upgrading the Kitchen/Server area floors, walls and fixtures to ensure a healthy and aesthetically pleasing cafeteria.

An initial release of \$ 365 k Capital in 2005 covered the development of detailed design of Cafeteria refurbishment, equipment purchases and some modifications for the temporary food service facilities.

The second release of \$ 1,157 k Capital and \$ 120 k MFA was approved in 2006 to fund the detailed design for discovery work to upgrade mechanical/electrical systems associated with the Cafeteria, install temporary equipment and food service facilities, upgrade power supply to electrical services serving the new kitchen equipment, and purchase new kitchen equipment.

4. ALTERNATIVES AND ECONOMIC ANALYSIS

ALTERNATIVES & ECONOMIC ANALYSIS

Base Case: (Status Quo) – Not Recommended

Do nothing. There will be no improvements to the Pickering Cafeteria; this will continue to impact on safety and public image. There will be no upgrades to meet current standards, and to ensure a healthy and aesthetically pleasing cafeteria. It is anticipated that continued deterioration of food service equipment will result in shutdown of Cafeteria.

We do not recommend this alternative as this will not address the business objectives of this project.

Alternative 1: (Implement Modifications) – Recommended Alternative

NPV = - \$ 4,504 k

The improvements to the Pickering Nuclear Cafeteria refurbishment will proceed as per approved Business Plan and Project Charter P-PCH-28160-00002 R01.

These improvements will have intrinsic value for the Pickering nuclear station and also a positive impact on visitors to the station.

The current total releases of \$ 1,522 k covered the completion of the Detailed Design phase, installation of all temporary food service facilities, and the upgrade of power supply to electrical services for the new

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Cafeteria equipment.

This release of \$ 3,639 k will cover the construction costs of Cafeteria refurbishment including the mechanical/electrical system upgrades, independent kitchen/server HVAC system, modification of washrooms on the first floor of Administration Building and removal of temporary food service facilities.

We recommend satisfying the Business Objectives of this project by completing the installation of Cafeteria modifications outlined in the proposal section.

Alternative 2: (Delay work) – Not Recommended

Delaying the investment is not considered as a feasible alternative since it is anticipated that continued deterioration of equipment will result in shutdown of cafeteria food services.

5. THE PROPOSAL

The Cafeteria is to be refurbished to upgrade the Kitchen, Server and loading and receiving area up to current standards, modify existing washrooms and basement rooms to accommodate the Cafeteria upgrade, and replace walls, floors, and fixtures to ensure a healthy and pleasing facility.

To support this project and maintain food services during Cafeteria refurbishment, Temporary Facilities will be set up on site.

The existing electrical, HVAC, grease interceptors and drainage systems were found deficient, obsolete and unable to handle the current or future upgrades.

The release will cover the costs of Cafeteria refurbishment, installation of Temporary Food Service Facilities, new HVAC system, and upgrade of all mechanical and electrical systems associated with the refurbishment.

The project will be executed as an Owner-Constructor Contract.

Deliverables/refurbishments completed in 2005:

- Develop project scope.
- Detailed design of selected layout option and design documents.
- Detailed design of Temporary Food Service Facilities
- Equipment purchases for Temporary Facilities

Deliverables/refurbishments completed in 2006:

- Detailed Design for the Discovery Work to upgrade mechanical/electrical systems in the Administration Building
- Final design and design documents
- Installation of temporary food service facilities including:
 - Retrofit training trailer to accommodate hot food services and extra seating
 - Installation of mobile kitchen & food prep trailers
 - Installation of cold food server area in the main building
- Prepare tendering package for upgrade installation and award construction contract
- Upgrade power supply to electrical services serving the new kitchen equipment
- Install covered walkway between Administration Building and renovated trailer

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- Close main Cafeteria and move operation to Temporary Facilities

Deliverables/refurbishments to complete in 2007:

- Install Cafeteria Kitchen/Server/loading and receiving refurbishment
- Install independent kitchen/server HVAC system
- Upgrade mechanical/electrical systems for new Cafeteria
- Modify existing washrooms and basement rooms to accommodate Cafeteria upgrade
- Removal of Temporary Food Services Facilities

Milestones:

- Project Charter: August 2006
- Detailed Design Phase Complete: September 2006
- Temporary Food Service Facilities Complete: October 2006
- Close main Cafeteria : December 2006
- Cafeteria Construction Complete: July 2007
- Washrooms modifications Complete: September 2007
- Project Complete: December 2007

6. QUALITATIVE FACTORS

Implementation will result in visible improvements and help to sustain a healthy and aesthetically pleasing cafeteria at the Pickering Nuclear station; this in turn will result in positive public image; there are no Sustainable Energy Development impacts.

7. RISKS

The Risk Management Table identifying the Risks, Consequences, Mitigating Activity and residual risk is attached in Appendix A.

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8. POST IMPLEMENTATION REVIEW (PIR) PLAN

The Post Implementation Review (PIR) plan will be prepared by the Project Leader, reviewed by project Manager/Owner and approved by the Project Sponsor.

| Type of PIR | | Target Project In Service date | | Target PIR Completion date |
|--|--|--|--|---|
| Simplified | | (31/July/2007) | | (31/Dec/2007) |
| Measurable Parameter | Current Baseline | Target Result | How will it be measured? | Who will measure it? (person/group) |
| 1. Upgrade Cafeteria to address current health and safety conditions | Modifications have not been installed | Modifications installed & successfully turned over to Operations | Successful Available for Service (AFS) | Sponsor-Common Services Manager |
| 2. Improve capacity, customer throughput & aesthetics of Cafeteria | General deterioration of facilities & food service equipment | Improved public image and employee & visitor satisfaction | JH&SC walk down & reviews | Sponsor-Common Services Manager and JH&SC |

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APPENDIX A:

Project title: Pickering Administration Building Cafeteria Modifications

Project Risk Profile

| Risk category | Description of Risk | Description of Consequence | Risk Before Mitigation | Mitigating Activity | Risk After Mitigation |
|------------------|--|--|------------------------|---|-----------------------|
| Cost | Unforeseen costs of project execution -Discovery work during demolition -Design Changes required due to field changes | Increased Costs Schedule Delays | Medium | -Contract changes will be handled through the Contractor Management process -Project contingency (\$500k) covers the unforeseen costs | Low |
| Scope | Unforeseen Scope -Building Permit review in progress, could flag design changes -Difficulty to isolate water supplies in Admin. Building -Possible interface of new HVAC ductwork with existing piping systems/structural steel | Increased Costs Schedule Delays | Medium | -Scope changes will be handled through the Project Management process -Contract changes will be handled through the Contractor Management process -Project contingency (\$500k) covers the unforeseen costs | Low |
| Schedule | -Delays in field work due to delays in issuing of installation contract, Building Permit -Interface with Admin. Building station activities not allowing the tie in connections to be completed on time during day shift | Contract cost penalties for stand down time Missed Milestones | Medium | -Monitor through Project Management process -Plan for shift work to reduce impact on schedule | Low |
| Resources | Lack of sufficient Project Support during project execution (i.e. Contract Monitor) | Schedule delays | Med | Hiring of additional resources in progress | Low |

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BUSINESS CASE SUMMARY TEMPLATE

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|----------------------------|---|---|-----|---|-----|
| Technical | There are no technical issues associated with this Project. Cafeteria Modifications Design is complete. | | | | |
| Regulatory | None-Regulators are not involved in this project and associated modifications | | | | |
| Environmental | None- There are no environmental issues associated with this project | | | | |
| Health & Safety | Discovery of asbestos during demolition in areas not included in the test program | Not in compliance with Regulation respecting Asbestos on Construction projects and in Buildings and Repair Operations (O. Reg 278/05) | Low | Sample and test material to confirm asbestos presence | Low |
| Investment | Modifications do not work as planned | Business Objectives will not be met | Low | Modifications are not of a complex nature | Low |
| Other Specify | | | | | |

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For Internal Project Cost Control

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APPENDIX B:

| | | | |
|------------------------------------|--|-----------|----------|
| ONTARIOPOWER GENERATION | PROJECT Summary of Estimate | Date | 5 Jan 07 |
| | | Project # | 13-25607 |

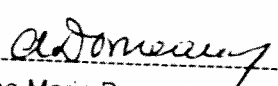
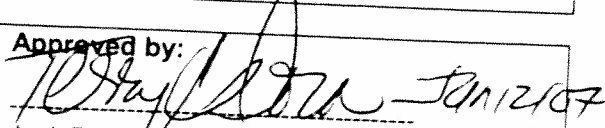
| | | |
|-----------------------|---|--|
| Facility Name: | Pickering Nuclear Generating Station | |
| Project Title: | Pickering Administration Building Cafeteria Modifications | |

Estimated Cost in \$k: \$ 5,215k Capital and \$ 385k MFA

| Year | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Totals | % |
|------------------------|------|-------|-------|------|------|------|------|--------|-----|
| OPG Project Management | | 120 | 120 | | | | | 240 | 4 |
| Engineering | | 15 | 85 | | | | | 100 | 2 |
| Permanent Materials | | 140 | 200 | | | | | 340 | 7 |
| Consultants | 40 | 170 | 280 | | | | | 490 | 9 |
| OPG Construction | 2 | 90 | 220 | | | | | 312 | 6 |
| Construction Contracts | | 915 | 2,160 | | | | | 3,075 | 59 |
| Interest | | 30 | 128 | | | | | 158 | 3 |
| Contingency | | | 500 | | | | | 500 | 10 |
| TOTAL CAPITAL | 42 | 1,480 | 3,693 | | | | | 5,215 | 100 |
| TOTAL MFA | | 120 | 265 | | | | | 385 | 100 |

Notes:

- Schedule Start Date: Jan 2007
 In-Service Date: Dec 2007
- Interest and Escalation rates are based on current allocation rates provided by Corporate Finance
- Includes Removal Costs of: 0
- Includes Definition Phase Costs of: 0
- Percentages above relate to the total cost. 0

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| Prepared by:  Ane Marie Dorneanu Project Leader | Approved by:  Jack Ballard Manager, NEF Project Eng & Support |
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APPENDIX C:

Financial Model — Assumptions

Project Cost Assumptions:

1. The cost of the project was calculated assuming that the schedule would be maintained and, that proper resources were allotted to the project. The project will be completed by December, 2007. Changes in the schedule, scope and, the availability of resources would likely increase the cost of the project.
2. Project Cost includes the interest of 3% and contingency of 10%.

Financial Assumptions:

1. Only the recommended alternative was analysed. The other alternatives (Status Quo and Delay Work) are not viable alternatives and were not analysed.
2. Project Type –Sustaining
3. Capital Expenditure Type: Class 1- Buildings& other structures

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| | | | |

Economic Analyses Spreadsheets for Recommended Alternative

APPENDIX D:

Business Case Summary Template

| | | | | | |
|--|--|-----------------------------------|--|-----------------|--|
| Project Description | | Document Number FIN-TMP-PA-006 | | Revision R01 | |
| Name of Project: Pickering Administration Building Cafeteria Modifications | | SIMPLIFIED ECONOMIC EVALUATION | | | |
| Description of Alternative: Proceed with the refurbishment of Cafeteria | | | | | |
| User Inputs | | Output | | | |
| Generation Asset (to select tax rate - Year/No) | | Success rate | | NPV (4,004.3) | |
| Project Type | | 10 | | N/A | |
| REVENUE/SAVINGS | | Present | | 2007 | |
| Total Revenue/Savings | | 2007 | | 2008 | |
| OMIA COSTS | | 2007 | | 2008 | |
| Total OMIA Costs | | 2007 | | 2008 | |
| Total Revenue less OMIA costs | | 2007 | | 2008 | |
| After tax cash inflows (outflows) | | 2007 | | 2008 | |
| CAPITAL EXPENDITURES | | 2007 | | 2008 | |
| Class 1 - buildings & other structures | | 2007 | | 2008 | |
| Class 8 - office equipment, miscellaneous equipment | | 2007 | | 2008 | |
| Class 10 - Automotive equipment, trailers | | 2007 | | 2008 | |
| Class 12 - computer appl. software | | 2007 | | 2008 | |
| Class 17 - generating equipment, road, sidewalk, parking area | | 2007 | | 2008 | |
| Class 17* - Combustion turbines acquired after 2005-06-22 | | 2007 | | 2008 | |
| Class 26 - heavy water | | 2007 | | 2008 | |
| Class 42 - fibre optic | | 2007 | | 2008 | |
| Class 43.1 - Small Hydro Electric | | 2007 | | 2008 | |
| Class 43.1* - High efficiency open & renewables | | 2007 | | 2008 | |
| Class 45 - Personal computers, systems software in Class 10 | | 2007 | | 2008 | |
| Class 46 - Data network infrastructure equipment | | 2007 | | 2008 | |
| Land | | 2007 | | 2008 | |
| Total CAPITAL EXPENDITURES | | 2007 | | 2008 | |
| Tax Shield Factor in terminal year | | 2007 | | 2008 | |
| Total net cash flows (a) + (b) + (c) | | 2007 | | 2008 | |
| Present value factor | | 2007 | | 2008 | |
| Present value of cash flows | | 2007 | | 2008 | |
| Accumulated present value of cash flows | | 2007 | | 2008 | |
| NPV | | 2007 | | 2008 | |
| IRR (10 year) | | 2007 | | 2008 | |

PICKERING ADMINISTRATION BUILDING CAFETERIA MODIFICATION

PROJECT NUMBER: 13-25607

1. RECOMMENDATION:

We recommend approval of a superseding release of \$ 6,815 k (including contingency) and \$ 385 k MFA to allow Nuclear East Facilities to complete the refurbishment of Pickering Administration Building Cafeteria kitchen, server, loading and receiving areas, the upgrading of HVAC, mechanical and electrical systems serving the new kitchen equipment, and modification of washrooms on the first floor of Administration Building.

| | | | | | | |
|---|------------|----------|-------|------|--------------------|-------|
| Total Investment Cost: \$ 6,815 k Capital and \$ 385 k MFA (including previous releases of \$ 5,215 k Capital and \$ 265 k MFA) | | | | | | |
| Project Cash Flow (\$k) | | | | | | |
| Currently Release | Funding | LTD 2006 | 2007 | 2008 | 2009 | Total |
| | Capital | 1,522 | 3,693 | | | 5,215 |
| | MFA | 120 | 265 | 0 | | 385 |
| Currently Release | | | | | | |
| This Release | Capital | 56 | 1,544 | 0 | | 1,600 |
| This Release | MFA | 0 | 0 | | | 0 |
| Total Project Costs | Capital | 1,578 | 5,237 | 0 | | 6,815 |
| Total Project Costs | MFA | 157 | 228 | | | 385 |
| Life to date Expenditure | Capital | 1578 | 886 | | | 2464 |
| Life to date Expenditure | MFA | 157 | 0 | | | 157 |
| Investment Type | Class | NPV | | IRR | Discounted Payback | |
| Capital & MFA | Sustaining | (K) | | N/A | N/A | |

This project is included in the approved 2007-2011 Business Plan

The objective of this sustaining project is to refurbish the existing Cafeteria in order to:

- Address sub-standard health & safety conditions of Cafeteria facilities and kitchen equipment
- Improve functionality and aesthetics of Kitchen/Server by remodelling of floors, walls, & fixtures
- Upgrade existing HVAC, mechanical & electrical systems associated with Cafeteria modifications
- Improve public image, employee & visitor satisfaction

2. SIGNATURES:

Submitted By:

Terry Doran
Director, Nuclear Integration

Date

April 19/07

Line Approval:

Mark Elliott
SVP, Pickering A

Date

April 29, 2007

Finance Approval:

Randy Leavitt
Director, Investment Management

Date

April 26, 2007

Inc. cash costs have been challenged by Project Manager using another constructor & a line by line review by SVP. Project can proceed

3. BACKGROUND & ISSUES

There have not been any significant improvements made to the cafeteria equipment or aesthetics since the last addition 20 years ago except replacement of some kitchen equipment in 2003. The food service equipment is obsolete, defective, and poses a safety concern (a fire in 2003 has been attributed to old equipment). Cafeteria requires modernization and updating in order to meet the needs of the kitchen staff and customer. In addition, the cafeteria is the focal point as you enter the Administration Building. It needs updating to provide a positive message to visitors entering the building.

The refurbishments include bringing the Kitchen and Server area up to current standards, updating the loading and receiving area, modify exiting washrooms and basement rooms to accommodate the cafeteria upgrade, and upgrading the Kitchen/Server area floors, walls and fixtures to ensure a healthy and aesthetically pleasing cafeteria.

An initial release of \$ 365 k Capital in 2005 covered the development of detailed design of Cafeteria refurbishment, equipment purchases and some modifications for the temporary food service facilities. The second release of \$ 1,157 k Capital and \$ 120 k MFA was approved in 2006 to fund the detailed design for discovery work to upgrade mechanical/electrical systems associated with the Cafeteria, install temporary equipment and food service facilities, upgrade power supply to electrical services serving the new kitchen equipment, and purchase new kitchen equipment.

A full release of 5,215 k Capital and \$ 385 k MFA was approved in Jan 2007 to fund the construction costs of Cafeteria refurbishment, installation of temporary food service facilities, new HVAC system, upgrade all mechanical and electrical systems associated with the refurbishment, and complete the project.

Project construction costs included in the full release were based on tendered price for Cafeteria kitchen/servery, budgetary estimates for HVAC package, and an additional 10% (\$ 500k) contingency to total project costs. HVAC design package was not completed, and not included in the tendered Scope of Work for Cafeteria. Budget estimates for HVAC provided by Design Agency were [REDACTED] of Cafeteria tender price versus Design Agency's estimates.

During the demolition phase of Cafeteria, additional scope of work and scope changes were discovered due to interferences with new equipment, removal of abandon piping and cables, and lack of updated drawings from previous renovations. Major scope changes include removal and relocation of supply ducting to building 2 nd floor, and addition of platform for HVAC roof top equipment. Actual HVAC cost provided by Cafeteria's Constructor with a good knowledge of demolition issues, and scope changes is 3 times higher than the budgetary estimates. The cost variance of HVAC package is \$ 1,200 k.

4. ALTERNATIVES AND ECONOMIC ANALYSIS

| \$ 000's | Do Nothing | Alt 1 (Recommended) | | Alt 2 Delay | Alt 3 | Alt 4 | Alt 5 |
|--------------------------|------------|---------------------|---------------------|----------------|-------|-------|-------|
| | | Full Cost | Incremental Cost | | | | |
| Project Cost Capital | | (6,815) | | | | | |
| NPV (after tax) | | (5,867) | | | | | |
| Impact on Economic Value | | N/A | | | | | |
| IRR% | | N/A | | | | | |
| Discounted Payback (Yrs) | | N/A | | | | | |

ALTERNATIVES & ECONOMIC ANALYSIS

Base Case: (Status Quo) – Not Recommended

Do nothing. There will be no improvements to the Pickering Cafeteria; this will continue to impact on safety and public image. There will be no upgrades to meet current standards, and to ensure a healthy and aesthetically pleasing cafeteria. It is anticipated that continued deterioration of food service equipment will result in shutdown of Cafeteria.

We do not recommend this alternative as this will not address the business objectives of this project.

Alternative 1: (Implement Modifications) – Recommended Alternative

NPV = - \$ 5,867 k

The improvements to the Pickering Nuclear Cafeteria refurbishment will proceed as per approved Business Plan and Project Charter P-PCH-28160-00002 R01.

These improvements will have intrinsic value for the Pickering nuclear station and also a positive impact on visitors to the station.

Current full releases of \$ 5,215 k covered the complete refurbishment of Cafeteria kitchen, server, loading and receiving areas, upgrading of HVAC, mechanical, electrical systems serving the new kitchen equipment, and modification of washrooms on the first floor of Administration Building.

This release of \$ 1,600 k will cover the completion of independent kitchen/server HVAC system, high cost variance of HVAC installation, additional cost of discovery work and scope changes for Cafeteria project including HVAC system during demolition and installation phases.

We recommend satisfying the Business Objectives of this project by completing the installation of Cafeteria modifications outlined in the proposal section.

Alternative 2: (Delay work) – Not Recommended

Delaying the investment is not considered as a feasible alternative since it is anticipated that continued deterioration of equipment will result in shutdown of cafeteria food services.

5. THE PROPOSAL

The Cafeteria is to be refurbished to upgrade the Kitchen, Server and loading and receiving area up to current standards, modify existing washrooms and basement rooms to accommodate the Cafeteria upgrade, and replace walls, floors, and fixtures to ensure a healthy and pleasing facility.

To support this project and maintain food services during Cafeteria refurbishment, Temporary Facilities will be set up on site.

The existing electrical, HVAC, grease interceptors and drainage systems were found deficient, obsolete and unable to handle the current or future upgrades. The full release covers the costs of Cafeteria refurbishment, installation of Temporary Food Service Facilities, new HVAC system, and upgrade of all mechanical and electrical systems associated with the refurbishment. This superseding release will cover

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|---|--|---------------------|------------------|
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the additional installation cost of HVAC system, extensive discovery work and scope changes due to interferences, configuration management errors, higher labour rates, and project contingency.

The project will be executed as an Owner-Constructor Contract.

Deliverables/refurbishments completed in 2005:

- Develop project scope.
- Detailed design of selected layout option and design documents.
- Detailed design of Temporary Food Service Facilities
- Equipment purchases for Temporary Facilities

Deliverables/refurbishments completed in 2006:

- Detailed Design for the Discovery Work to upgrade mechanical/electrical systems in the Administration Building
- Final design and design documents
- Installation of temporary food service facilities including:
 - Retrofit training trailer to accommodate hot food services and extra seating
 - Installation of mobile kitchen & food prep trailers
 - Installation of cold food server area in the main building
- Prepare tendering package for upgrade installation and award construction contract
- Upgrade power supply to electrical services serving the new kitchen equipment
- Install covered walkway between Administration Building and renovated trailer
- Close main Cafeteria and move operation to Temporary Facilities

Deliverables/refurbishments to complete in 2007:

- Install Cafeteria Kitchen/Server/loading and receiving refurbishment
- Install independent kitchen/server HVAC system
- Install additional work due to Scope changes and discovery work
- **Upgrade mechanical/electrical systems for new Cafeteria**
- Modify existing washrooms and basement rooms to accommodate Cafeteria upgrade
- Removal of Temporary Food Services Facilities

Milestones:

- Project Charter: August 2006
- Detailed Design Phase Complete: September 2006
- Temporary Food Service Facilities Complete: October 2006
- Close main Cafeteria : December 2006
- Cafeteria Construction Complete: September 2007
- Washrooms modifications Complete: September 2007
- Project Complete: December 2007

6. QUALITATIVE FACTORS

Implementation will result in visible improvements and help to sustain a healthy and aesthetically pleasing cafeteria at the Pickering Nuclear station; this in turn will result in positive public image; there are no Sustainable Energy Development impacts.

7. RISKS

The Risk Management Table identifying the Risks, Consequences, Mitigating Activity and residual risk is attached in Appendix A.

8. POST IMPLEMENTATION REVIEW (PIR) PLAN

The Post Implementation Review (PIR) plan will be prepared by the Project Leader, reviewed by project Manager/Owner and approved by the Project Sponsor.

| Type of PIR | | Target Project In Service date | | Target PIR Completion date |
|--|--|--|--|---|
| Simplified | | (30/September/2007) | | (31/Dec/2007) |
| Measurable Parameter | Current Baseline | Target Result | How will it be measured? | Who will measure it? (person/group) |
| 1. Upgrade Cafeteria to address current health and safety conditions | Modifications have not been installed | Modifications installed & successfully turned over to Operations | Successful Available for Service (AFS) | Sponsor-Common Services Manager |
| 2. Improve capacity, customer throughput & aesthetics of Cafeteria | General deterioration of facilities & food service equipment | Improved public image and employee & visitor satisfaction | JH&SC walk down & reviews | Sponsor-Common Services Manager and JH&SC |

APPENDIX A:

Attachment 2 (NON-CONFIDENTIAL)

Project title: Pickering Administration Building Cafeteria Modifications

Project Risk Profile

| Risk category | Description of Risk | Description of Consequence | Risk Before Mitigation | Mitigating Activity | Risk After Mitigation |
|---------------|---|--|------------------------|---|-----------------------|
| Cost | Additional costs of project execution -Discovery work during demolition & installation -Design Changes required due to field changes | Increased Costs Schedule Delays | High | -Contract changes will be handled through the Contractor Management process - Design Changes will be executed by Design Agency -Project contingency (\$700k) covers the additional work and unforeseen costs | Low |
| Scope | Additional Scope -Difficulty to isolate electrical/water systems in Admin. Building -Design Changes due to field changes & discovery work -Interface of new HVAC ductwork with existing piping systems/structural steel during demolition & installation | Increased Costs Schedule Delays due to additional work | High | -Scope changes will be handled through the Project Management process -Contract changes will be handled through the Contractor Management process -Project contingency (\$700k) covers the additional work and unforeseen costs | Low |
| Schedule | -Delays in field work due to interface with Admin. Building station activities not allowing the tie in connections to be completed on time during day shift | Contract cost penalties for stand down time Missed Milestones | Medium | -Monitor through Project Management process -Plan for shift work to reduce impact on schedule | Low |
| Resources | Lack of sufficient Project Support during installation Contract/Administrator/Monitor for second shift | Schedule delays Increased Costs | Medium | Project management to find the resources as required | Low |

BUSINESS CASE SUMMARY TEMPLATE

Attachment 2 (NON-CONFIDENTIAL)

| | | | | | |
|----------------------------|---|---|--------|--|-----|
| Technical | Cafeteria & HVAC Design changes are complete. Potential of design changes required by shop drawings for equipment | Increased Costs Schedule Delays | Medium | - Design Changes will be executed by Design Agency through Management process -Project contingency (\$700k) covers the additional work and unforeseen costs | Low |
| Regulatory | None-Regulators are not involved in this project and associated modifications | | | | |
| Environmental | None- There are no environmental issues associated with this project | | | | |
| Health & Safety | Discovery of asbestos during demolition in areas not included in the test program | Not in compliance with Regulation respecting Asbestos on Construction projects and in Buildings and Repair Operations (O. Reg 278/05) | Medium | Sample and test material to confirm asbestos presence | Low |
| Investment | Scope of work is defined, and major discovery work is identified. Business objectives were identified. | Business Objectives will not be met | Low | Modifications are according to current standards for new Cafeteria facilities | Low |
| Other Specify | | | | | |

APPENDIX B:

| | | | |
|----------------------------|--------------------------------|-----------|-------------|
| ONTARIOPOWER GENERATION | PROJECT Summary of Estimate | Date | 19 April 07 |
| | | Project # | 13-25607 |

| | | |
|----------------|---|--|
| Facility Name: | Pickering Nuclear Generating Station | |
| Project Title: | Pickering Administration Building Cafeteria Modifications | |

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Totals | % |
|------------------------|-------|-------|------|------|------|------|--------|-----|
| OPG Project Management | 120 | 260 | | | | | 380 | 6 |
| Engineering | 20 | 20 | | | | | 40 | 0.5 |
| Permanent Materials | 196 | 219 | | | | | 415 | 6 |
| Consultants | 210 | 260 | | | | | 470 | 7 |
| OPG Construction | 92 | 58 | | | | | 150 | 2.2 |
| Construction Contracts | 910 | 3,600 | | | | | 4,510 | 66 |
| Interest | 30 | 120 | | | | | 150 | 2.3 |
| Contingency | | 700 | | | | | 700 | 10 |
| TOTAL CAPITAL | 1,578 | 5,237 | | | | | 6,815 | 100 |
| TOTAL MFA | 120 | 265 | | | | | 385 | 100 |

- Notes:
- Schedule Start Date: Jan 2007
In-Service Date: Dec 2007
 - Interest and Escalation rates are based on current allocation rates provided by Corporate Finance
 - Includes Removal Costs of: 0
 - Includes Definition Phase Costs of: 0
 - Percentages above relate to the total cost. 0

Prepared by:

Ane Marie Dorneanu
Ane Marie Dorneanu
Project Leader

Approved by:

Jack Ballard
Jack Ballard
Manager, NEF Project Eng & Support

APPENDIX C:

Attachment 2 (NON-CONFIDENTIAL)

Financial Model – Assumptions**Project Cost Assumptions:**

1. The cost of the project was calculated assuming that project will be completed by December, 2007. Changes in the schedule, scope and, the availability of resources would likely increase the cost of the project.
2. Project Cost includes the interest of 3% and contingency of 10%.

Financial Assumptions:

1. Only the recommended alternative was analysed. The other alternatives (Status Quo and Delay Work) are not viable alternatives and were not analysed.
2. Project Type –Sustaining
3. Capital Expenditure Type: Class 1- Buildings& other structures

Economic Analyses Spreadsheets for Recommended Alternative

APPENDIX D:

ONTARIO POWER GENERATION

Document Number: FIN-TMP-PA-008
BCS FINANCIAL EVALUATION

Revision: R01

Project Description: **SIMPLIFIED ECONOMIC EVALUATION**

Name of Project: Pickering Administration Building Cafeteria Modifications
Alternative: #1
Description of Alternative: Proceed with the refurbishment of Cafeteria

User Inputs

Generation Asset (to select tax rate - Yes/No) ☐ **NPV (\$,000)**
Discount rate 10.0% **IRR (10 year)**
Project Type **Output**

| \$k | Present | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---------------------------------------|---------|------|------|------|------|------|------|------|------|------|------|
| REVENUE/SAVINGS | | | | | | | | | | | |
| Total Revenue/Savings | | | | | | | | | | | |
| OM&A COSTS | | | | | | | | | | | |
| Total OM&A Costs | | | | | | | | | | | |
| Total REVENUE less OM&A costs | | | | | | | | | | | |
| (e) After tax cash inflows (outflows) | | | | | | | | | | | |

| | Present | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|--|-----------|-----------|------|------|------|------|------|------|------|------|------|
| CAPITAL EXPENDITURES | | | | | | | | | | | |
| Class 1 - Buildings & other structures | (1,578.0) | (5,137.0) | | | | | | | | | |
| Class 8 - office equipment, miscellaneous equipment | | | | | | | | | | | |
| Class 10 - Automotive equipment, trailers | | | | | | | | | | | |
| Class 12 - computer appl. software | | | | | | | | | | | |
| Class 17 - generating equipment | | | | | | | | | | | |
| Class 27 - Construction material, equipment, 2005-10-22 | | | | | | | | | | | |
| Class 28 - heavy water | | | | | | | | | | | |
| Class 42 - fibre optic | | | | | | | | | | | |
| Class 43 - Small Hydro Electric | | | | | | | | | | | |
| Class 43 - High efficiency vapor & renewables | | | | | | | | | | | |
| Class 45 - Personal computers, systems software (Class 10) | | | | | | | | | | | |
| Class 46 - Data network infrastructure equipment | | | | | | | | | | | |
| Land | | | | | | | | | | | |
| b) Total CAPITAL EXPENDITURES | (1,578.0) | (5,137.0) | | | | | | | | | |
| c) Tax Shield and | | | | | | | | | | | |
| Tax Shield Factor in terminal year | | 49.2 | 94.5 | 92.8 | 88.8 | 85.4 | 82.0 | 78.7 | 75.5 | 72.5 | 69.6 |
| d) Total net cash flows (e) + (b) + (c) | (1,578.0) | (5,187.0) | 94.5 | 92.8 | 88.8 | 85.4 | 82.0 | 78.7 | 75.5 | 72.5 | 69.6 |

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Present value factor | 1.000 | 0.943 | 0.897 | 0.786 | 0.681 | 0.592 | 0.518 | 0.460 | 0.415 | 0.380 |
| Present value of cash flows | (1,578.0) | (4,940.3) | 83.6 | 73.0 | 63.7 | 55.6 | 48.5 | 42.5 | 37.0 | 32.5 |
| Accumulated present value of cash flows | (1,578.0) | (6,440.7) | (5,357.2) | (4,304.4) | (3,248.4) | (2,199.9) | (1,153.5) | (6,120.6) | (5,048.3) | (3,967.3) |
| NPV | | | | | | | | | | |
| IRR (10 year) | | | | | | | | | | |

| | | | |
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| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 1 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

PICKERING ADMINISTRATION BUILDING CAFETERIA MODIFICATIONS
PROJECT NUMBER: 13-25607

1. RECOMMENDATION:

We recommend approval of a superseding release of \$ 8,615 k (including contingency) and \$ 303 k MFA to allow Nuclear East Facilities to complete the refurbishment of Pickering Administration Building Cafeteria kitchen, server, loading and receiving areas, the upgrading of HVAC, mechanical and electrical systems serving the new kitchen equipment, and modification of washrooms on the first floor of Administration Building.

| | | | | | | |
|---|------------|----------|----------------|------|------|----------------|
| Total Investment Cost: \$ 8,615 k Capital and \$ 303 k MFA (including previous releases of \$ 6,815 k Capital and \$ 265 k MFA) | | | | | | |
| Project Cash Flow (\$k) | | | | | | |
| | Funding | LTD 2006 | 2007 | 2008 | 2009 | Total |
| Currently Release | Capital | 1,578 | 5,237 | | | 6,815 |
| Currently Release | MFA | 157 | 146 | 0 | | 303 |
| This Release | Capital | 0 | 1,400 | 400 | | 1,800 |
| This Release | MFA | 0 | 0 | | | 0 |
| Total Project Costs | Capital | 1,578 | 6,637 | 400 | | 8615 |
| Total Project Costs | MFA | 157 | 146 | | | 303 |
| Life to date Expenditure | Capital | 1578 | 4349 | | | 5,927 |
| Life to date Expenditure | MFA | 157 | 146 | | | 303 |
| Investment Type | Class | | NPV (7,342) | | IRR | Discounted |
| Capital & MFA | Sustaining | | (k) | | N/A | Payback N/A |
| This project is included in the approved 2007-2011 Business Plan | | | | | | |

The objective of this sustaining project is to refurbish the existing Cafeteria in order to:

- Address sub-standard health & safety conditions of Cafeteria facilities and kitchen equipment
- Improve functionality and aesthetics of Kitchen/Server by remodelling of floors, walls, & fixtures
- Upgrade existing HVAC, mechanical & electrical systems associated with Cafeteria modifications
- Improve public image, employee & visitor satisfaction

2. SIGNATURES:

Submitted By:

Terry Doran
Director, Nuclear Integration

Date

Line Approval:

Mark Elliott
SVP, Pickering A

Date

Finance Approval:

Randy Leavitt
Director, Investment Management

Date

VP Finance Approval

Jim Beech
VP, Nuclear Finance

Date

| | | | |
|---|-------------------------------------|---------------------|------------------|
| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 2 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

3. BACKGROUND & ISSUES

There have not been any significant improvements made to the cafeteria equipment or aesthetics since the last addition 20 years ago except replacement of some kitchen equipment in 2003. The food service equipment is obsolete, defective, and poses a safety concern (a fire in 2003 has been attributed to old equipment). Cafeteria requires modernization and updating in order to meet the needs of the kitchen staff and customer. In addition, the cafeteria is the focal point as you enter the Administration Building. It needs updating to provide a positive message to visitors entering the building.

The refurbishments include bringing the Kitchen and Server area up to current standards, updating the loading and receiving area, modify exiting washrooms and basement rooms to accommodate the cafeteria upgrade, and upgrading the Kitchen/Server area floors, walls and fixtures to ensure a healthy and aesthetically pleasing cafeteria.

A full release of 5,215 k Capital and \$ 385 k MFA was approved in Jan 2007 to fund the construction costs of Cafeteria refurbishment, installation of temporary food service facilities, new HVAC system, upgrade all mechanical and electrical systems associated with the refurbishment, and complete the project.

Project construction costs included in the full release were based on tendered price for Cafeteria kitchen/servery, budgetary estimates for HVAC package. HVAC design package was not completed, and not included in the tendered Scope of Work for Cafeteria. During the demolition phase of Cafeteria, HVAC design package was tendered and the actual HVAC installation cost provided by Cafeteria's Constructor with a good knowledge of demolitions issues, and scope changes was 3 times higher than the budgetary estimates. The cost variance of HVAC package was \$ 1,200 k. The superseding release of \$6,815 k and \$ 385 k MFA was approved in April 2007.

During the installation phase of Cafeteria and the HVAC, mechanical and electrical systems, additional scope of work and scope changes were discovered due to interferences with new equipment, actual site conditions, building code violations, and lack of updated drawings from previous renovations.

Additional factors that coupled with the estimates have contributed to exceeding the budget: higher overhead charges, EPSCA and training costs, EPSCA rates increase, and cost of additional engineering and station support resources.

This new superseding release will cover the completion of installation and commissioning of the Cafeteria equipment, HVAC system, mechanical and electrical system, modifications of existing washrooms on first floor, resolution of open items, and the closing the EC engineering packages.

The total cost variance of this superseding release is \$ 1,800 k with a required cash flow of \$ 1,400 k in 2007 and \$ 400 k in 2008.

4. ALTERNATIVES AND ECONOMIC ANALYSIS

| \$ 000's | Do Nothing | Alt 1 (Recommended) | | Alt 2 Delay | Alt 3 | Alt 4 | Alt 5 |
|--------------------------|------------|---------------------|---------------------|----------------|-------|-------|-------|
| | | Full Cost | Incremental Cost | | | | |
| Project Cost Capital | | (8 500) | | | | | |
| NPV (after tax) | | 7 342 | | | | | |
| Impact on Economic Value | | N/A | | | | | |
| IRR | | N/A | | | | | |
| Discounted Payback (hrs) | | N/A | | | | | |

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* Associated with FIN-PROC-PA-001. Business Case Summary Guidelines

** Revised June 2006

| | | | |
|-------------------------------------|---------------------------------------|---------------------|------------------|
| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 3 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

ALTERNATIVES & ECONOMIC ANALYSIS

Base Case: (Status Quo) – Not Recommended

Do nothing.

Cafeteria and HVAC system installations are near completion and commissioning plans are in place to start in November. The Cafeteria upgrades will not be completed, the facility will be shut down permanently, and food services will be discontinued.

The objective of this project to improve the existing facility and ensure a healthy, safe, modern and aesthetically pleasing Cafeteria for Pickering staff and visitors.

We do not recommend this alternative as this will not address the business objectives of this project.

Alternative 1: (Implement Modifications) – Recommended Alternative

NPV = - \$ 7,342 k

The improvements to the Pickering Nuclear Cafeteria refurbishment will proceed as per approved Business Plan and Project Charter P-PCH-28160-00002 R01.

These improvements will have intrinsic value for the Pickering nuclear station and also a positive impact on staff and visitors to the station.

Current superseding releases of \$ 6,815 k covered the complete refurbishment of Cafeteria kitchen, server, loading and receiving areas, upgrading of HVAC, mechanical, electrical systems serving the new kitchen equipment, and modification of washrooms on the first floor of Administration Building.

This new release of \$ 1,800 k will cover the additional funding required to complete the installation, commissioning of systems and equipment, additional cost of discovery work, scope changes during installation of Cafeteria, HVAC system and washrooms modification. This release includes the allowance for resolution of open items to project close-out in May 2008, and performance of chilled water loop commissioning in spring of 2008. Existing system has been already winterized.

We recommend satisfying the Business Objectives of this project by completing the installation of Cafeteria modifications outlined in the proposal section.

Alternative 2: (Delay work) – Not Recommended

Delaying the investment is not considered as a feasible alternative.

Delays will result in higher expenditure of OM&A funds (Project 13-40514) for extension of rental and operation of the Temporary Mobile Kitchen Trailers through another winter. Also the covered walkway between the Administration Building and renovated seating trailer would be re-installed.

5. THE PROPOSAL

The Cafeteria is to be refurbished to upgrade the Kitchen, Server and loading and receiving area up to current standards, modify existing washrooms and basement rooms to accommodate the Cafeteria upgrade, and replace walls, floors, and fixtures to ensure a healthy and pleasing facility.

To support this project and maintain food services during Cafeteria refurbishment, Temporary Facilities were set up on site.

| | | | |
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| | BUSINESS CASE SUMMARY TEMPLATE | | |

The existing electrical, HVAC, grease interceptors and drainage systems were found deficient, obsolete and unable to handle the current or future upgrades. The full release covered the costs of Cafeteria refurbishment, installation of Temporary Food Service Facilities, new HVAC system, and upgrade of all mechanical and electrical systems associated with the refurbishment. This first superseding release covered the additional installation cost of HVAC system, extensive discovery work and scope changes due to interferences, configuration management errors, higher labour rates, and project contingency.

The new superseding release is required for the completion of installation, commissioning, and resolution of the open items to project close-out in May 2008.

[REDACTED]

The project will be executed as an Owner-Constructor Contract.
Construction contract is set as a MSA "Target Price" contract.

Deliverables/refurbishments completed in 2005:

- Develop project scope.
- Detailed design of selected layout option and design documents.
- Detailed design of Temporary Food Service Facilities
- Equipment purchases for Temporary Facilities

Deliverables/refurbishments completed in 2006:

- Detailed Design for the Discovery Work to upgrade mechanical/electrical systems in the Administration Building
- Final design and design documents
- Installation of temporary food service facilities including:
 - Retrofit training trailer to accommodate hot food services and extra seating
 - Installation of mobile kitchen & food prep trailers
 - Installation of cold food server area in the main building
- Prepare tendering package for upgrade installation and award construction contract
- Upgrade power supply to electrical services serving the new kitchen equipment
- Install covered walkway between Administration Building and renovated trailer
- Close main Cafeteria and move operation to Temporary Facilities

Deliverables/refurbishments to complete in 2007:

- Install Cafeteria Kitchen/Server/loading and receiving refurbishment
- Install independent kitchen/server HVAC system
- Install additional work due to Scope changes and discovery work
- Upgrade mechanical/electrical systems for new Cafeteria

| | | | |
|---|-------------------------------------|---------------------|------------------|
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| | BUSINESS CASE SUMMARY TEMPLATE | | |

- Modify existing washrooms and basement rooms to accommodate Cafeteria upgrade
- Removal of Temporary Food Services Facilities

Deliverables/refurbishments to complete in 2008:

- Commissioning of chilled water loop for HVAC in spring
- Resolve open items
- Project documentation & EC 's close-out

Milestones:

- Project Charter: August 2006
- Detailed Design Phase Complete: September 2006
- Temporary Food Service Facilities Complete: October 2006
- Close main Cafeteria : December 2006
- Cafeteria In-Service: November 2007
- Washrooms modifications Complete: December 2007
- Project Complete: December 2007
- Project Close-out May 2008

Note: Cafeteria In-service is contingent on the availability of fire water supply from the station to Cafeteria sprinklers system

6. QUALITATIVE FACTORS

Implementation will result in visible improvements and help to sustain a healthy and aesthetically pleasing cafeteria at the Pickering Nuclear station; this in turn will result in positive public image; there are no Sustainable Energy Development impacts.

7. RISKS

The Risk Management Table identifying the Risks, Consequences, Mitigating Activity and residual risk is attached in Appendix A.

8. POST IMPLEMENTATION REVIEW (PIR) PLAN

The Post Implementation Review (PIR) plan will be prepared by the Project Leader, reviewed by project Manager/Owner and approved by the Project Sponsor.

| Type of PIR | | Target Project In Service date | | Target PIR Completion date |
|--|--|--|--|---|
| Simplified | | (30/September/2007) | | (31/Dec/2007) |
| Measurable Parameter | Current Baseline | Target Result | How will it be measured? | Who will measure it? (person/group) |
| 1. Upgrade Cafeteria to address current health & safety conditions | Modifications have not been installed | Modifications installed & successfully turned over to Operations | Successful Available for Service (AFS) | Sponsor-Common Services Manager |
| 2. Improve capacity, customer throughput & aesthetics of Cafeteria | General deterioration of facilities & food service equipment | Improved public image and employee & visitor satisfaction | JH&SC walk down & reviews | Sponsor-Common Services Manager and JH&SC |

| | | | |
|---|-------------------------------------|---------------------|------------------|
| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 6 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

APPENDIX A:

Project title: Pickering Administration Building Cafeteria Modifications

Project Risk Profile

| Risk category | Description of Risk | Description of Consequence | Risk Before Mitigation | Mitigating Activity | Risk After Mitigation |
|------------------|---|--|------------------------|---|-----------------------|
| Cost | Additional costs of project execution - Cost of deficiencies -Discovery work during demolition & installation of male washroom -Premium costs for demolition & installation of washroom -Design Changes required due to field changes | Increased Costs Schedule Delays | High | -Monitor Contract changes through the Contractor Management process -Allowance for future discovery work in the new required release | Low |
| Scope | Additional Scope -Difficulty to isolate electrical/water systems and install civil modifications in Admin. Building due to building condition, and lack of updated drawings -Changes due to discovery work during commissioning - Commissioning of chilled water will be scheduled in spring of 2008, current system is winterized | Increased Costs Schedule Delays due to additional work | High | -Monitor Scope changes through the Project Management process Allowance of funding required in 2008 is identified in the new release request | Low |
| Schedule | -Delays in field work due to interface with Admin. Building station activities not allowing the tie in connections to be completed and have fire water supply available to Cafeteria sprinklers system - Lack of construction trades such as pipe fitters, welders | Contract cost penalties for stand down time Missed Milestones | Medium | -Monitor through Project Management process -Plan for shift work and week ends to reduce impact on schedule | Low |
| Resources | Lack of sufficient Project Support during installation Contract/Administrator/Monitor for second shift | Schedule delays Increased Costs | Medium | Project management to find the resources as required | Low |
| Technical | As Built Drawings and documentation for completion of open items during AFS, update of project documentation and close-out | Increased Costs Schedule Delays | Medium | -Completion of open items will be executed as per Project Management process -Allowance of funds in 2008 in the new required release to resolve all open items | Low |

| | | | |
|---|-------------------------------------|---------------------|------------------|
| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 7 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

| | | | | | |
|-----------------|--|-------------------------------------|--------|---|-----|
| Regulatory | None-Regulators are not involved in this project and associated modifications | | | | |
| Environmental | None- There are no environmental issues associated with this project | | | | |
| Health & Safety | Health & Safety Inspection - Durham Region and certification required for Cafeteria opening | Not in compliance with Regulation | Medium | Original Plans were approved and recommendations implemented. | Low |
| Investment | Scope of work is defined, and major discovery work is identified. Business objectives were identified. | Business Objectives will not be met | Low | Modifications are according to current standards for new Cafeteria facilities | Low |
| Other Specify | | | | | |

| | | | |
|-----------------------------------|-------------------------------------|---------------------|------------------|
| ONTARIOPOWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 8 of 10 |
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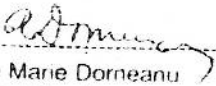
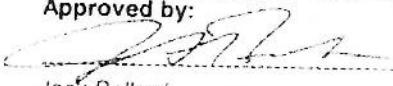
APPENDIX B:

| | | | |
|-----------------------------------|--------------------------------|-----------|---------------|
| ONTARIOPOWER GENERATION | PROJECT Summary of Estimate | Date | 30 October 07 |
| | | Project # | 13-25607 |

| | |
|----------------|---|
| Facility Name: | Pickering Nuclear Generating Station |
| Project Title: | Pickering Administration Building Cafeteria Modifications |

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Totals | % |
|------------------------|--------------|--------------|------------|------|------|------|-------------|------------|
| OPG Project Management | 120 | 318 | 45 | | | | 483 | 5.6 |
| Engineering | 20 | 20 | 35 | | | | 75 | 1.0 |
| | | | | | | | | |
| OPG Construction | 92 | 150 | 30 | | | | 272 | 3.2 |
| | | | | | | | | |
| Interest | 30 | 185 | 20 | | | | 235 | 2.7 |
| Contingency | | 190 | 115 | | | | 305 | 3.5 |
| TOTAL CAPITAL | 1,578 | 6,637 | 400 | | | | 8615 | 100 |
| TOTAL MFA | 157 | 146 | | | | | 303 | 100 |

| | | | |
|--|--|------------------|----------|
| Notes: | 1. Schedule | Start Date: | Jan 2007 |
| | | In-Service Date: | Dec 2007 |
| | 2. Interest and Escalation rates are based on current allocation rates provided by Corporate Finance | | |
| | 3. Includes Removal Costs of: | | 0 |
| | 4. Includes Definition Phase Costs of: | | 0 |
| 5. Percentages above relate to the total cost. | | | 0 |

| | |
|---|--|
| Prepared by: | Approved by: |
|  |  |
| Ane Marie Dorneanu Project Leader | Jack Ballard Manager, NEF Project Eng & Support |

| | | | |
|-------------------------------------|---------------------------------------|---------------------|------------------|
| ONTARIO POWER GENERATION | Document Number: FIN-TMP-PA-004* | Revision: R04 ** | Page: 9 of 10 |
| | BUSINESS CASE SUMMARY TEMPLATE | | |

APPENDIX C:

Financial Model – Assumptions

Project Cost Assumptions:

1. The cost of the project was calculated assuming that project will be completed by December, 2007. Changes in the schedule, scope and, the availability of resources would likely increase the cost of the project.
2. Project Cost includes the interest of 3% and contingency of 3.5% for the cost variance.

Financial Assumptions:

1. Only the recommended alternative was analysed. The other alternatives (Status Quo and Delay Work) are not viable alternatives and were not analysed.
2. Project Type –Sustaining
3. Capital Expenditure Type: Class 1- Buildings& other structures

| | | | |
|------------------------------------|-------------------------------------|---------------------|-------------------|
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| | BUSINESS CASE SUMMARY TEMPLATE | | |

APPENDIX D: Economic Analyses Spreadsheets for Recommended Alternative

74
10%

| | | |
|------------------------------------|------------------------------------|------------------|
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| | BCS FINANCIAL EVALUATION | |

Project Description: **Ontario Power Generation Building Cafeteria Modifications**
 Alternative: **1**
 Description of Alternative: **Proceed with the refurbishment of Cafeteria**

SIMPLIFIED ECONOMIC EVALUATION

| | |
|--|--|
| Name of Project: Generation Asset (for asset tax rate - Yes/No) Project Type | Discount rate 10.0% NPV (7,341.6) IRR (10.00%) N/A |
|--|--|

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|
| REVENUE SAVINGS | | | | | | | | | | |
| Total Revenue Savings | | | | | | | | | | |
| INITIAL COSTS | | | | | | | | | | |
| Total Initial Costs | | | | | | | | | | |
| Net Revenue less Initial Costs | | | | | | | | | | |
| After tax cash inflows (outflows) | | | | | | | | | | |

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|
| REVENUE SAVINGS | | | | | | | | | | |
| Total Revenue Savings | | | | | | | | | | |
| INITIAL COSTS | | | | | | | | | | |
| Total Initial Costs | | | | | | | | | | |
| Net Revenue less Initial Costs | | | | | | | | | | |
| After tax cash inflows (outflows) | | | | | | | | | | |

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|
| REVENUE SAVINGS | | | | | | | | | | |
| Total Revenue Savings | | | | | | | | | | |
| INITIAL COSTS | | | | | | | | | | |
| Total Initial Costs | | | | | | | | | | |
| Net Revenue less Initial Costs | | | | | | | | | | |
| After tax cash inflows (outflows) | | | | | | | | | | |

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 * Associated with FIN-PROC-PA-001, Business Case Summary Guidelines
 ** Revised June 2006