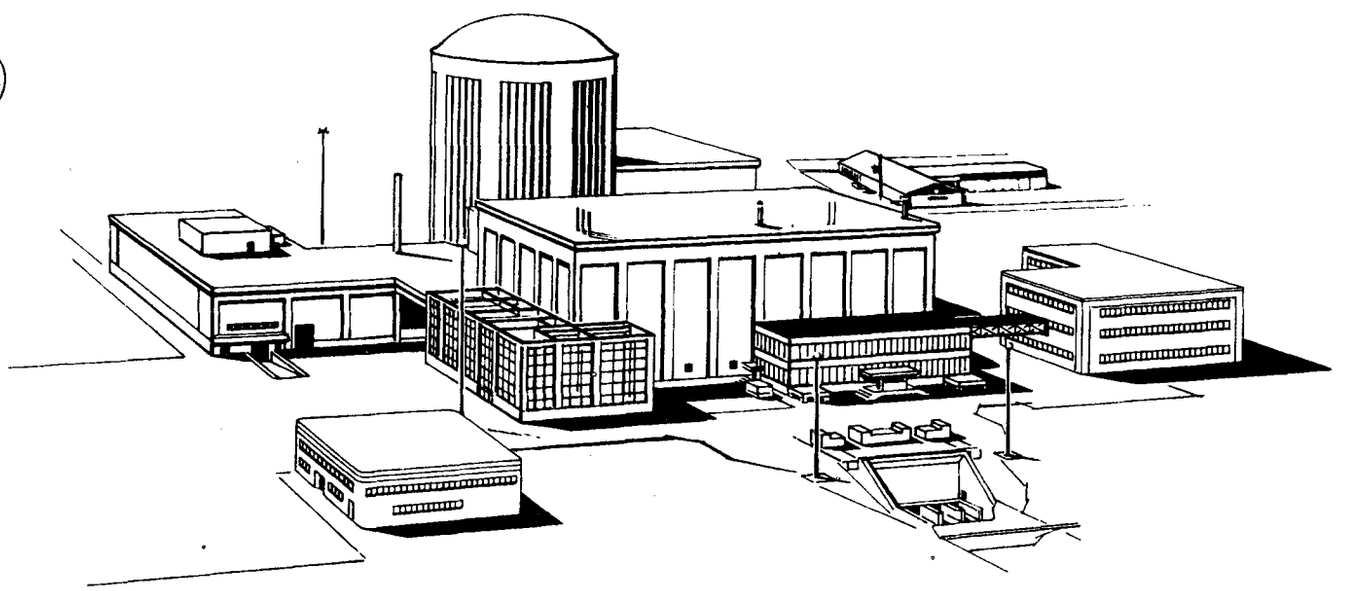
CONSTRUCTION AUTHORIZATION APPLICATION FOR

STEAM OENERATOR REPLACEMENT



KEWAUNEE NUCLEAR POWER PLANT

Public Service Corporation
(a subsidiary of WPS resources corporation)
700 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002

March 15, 1996

Ms. Lynda L. Dorr
Assistant Secretary to the Commission
Public Service Commission of Wisconsin
P. O. Box 7854
Madison, WI 53707

Dear Ms. Dorr:

Docket 6690-CE-151

Construction Authorization Application for Kewaunee Nuclear Power Plant Steam Generators and Related Issues

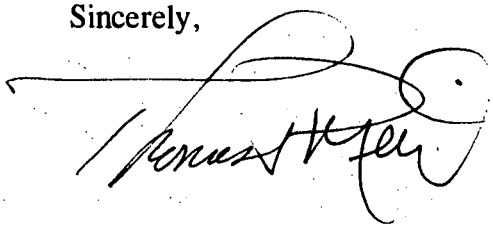
This letter and attachments hereto, provides the construction authorization application for the Kewaunee Nuclear Power Plant steam generator project, along with issues related to this project.

During the 1980's, the owners of the Kewaunee Nuclear Power Plant (KNPP) initiated action to address the steam generator tube degradation occurring in the plant's steam generators. During the 1988 refueling outage, steam generator tube sleeves were installed to mitigate the tube corrosion (primarily outside diameter stress corrosion cracking) which was occurring in the tubesheet region of the generators. Additional sleeves were installed during the 1989, 1991, and 1992 refueling outages. In addition to sleeving, other techniques were pursued to further mitigate the tube corrosion including changes in steam generator water chemistry and alternate tube repair criteria. These actions have slowed the corrosion mechanisms but have not completely stopped them and continued tube plugging will be required. The KNPP is no longer operating at full rated capacity due to the number of tubes that have been plugged. Steam generator A is currently 24.94% effectively plugged and the steam generator B is 17.69% effectively plugged for an average of 21.32%. The current KNPP safety analysis report allows an effective tube plugging limit of up to 25% average for both steam generators, not to exceed 25% in either steam generator. Analyses are currently being performed which we believe will increase the effective plugging limit up to 30%.

The KNPP owners have all concluded, based on the projected future tube degradation rate, that in order for the plant to more safely and economically operate until 2013, (the end of its current license), the steam generators would require replacement. Therefore, pursuant to Wisconsin Statute 196.49, and PSC 112.05(1)(b), Wisconsin Administrative Code, Wisconsin Public Service Corporation (WPSC) as operator of the facility, makes application for authority to replace the KNPP steam generators. The decision to file the application is based on an economic evaluation of alternatives by WPSC, a co-owner of the facility.

WPSC recognizes that for a project of this size, a 90-day review period (as identified in PSC 112.05) is an inadequate period of time for the Public Service Commission Staff to review and approve of this application (attached is the current milestone schedule for this project). Therefore, to aid you in your review of this filing, the following sections are included with the letter: Section 1 - the Construction Authorization Application, Section 2 - the Environmental Screening Report and, Section 3 - a discussion of the rational for and issues involved with the request for approval to accelerate right-off of book value and recovery of decommissioning funds. In order to maintain the option of having KNPP as a safe, reliable, and cost-effective power supply for the state of Wisconsin, out to the period of 2013, it is necessary to take the steps needed to maintain the option for steam generator replacement during the 1999 refueling outage. Therefore, we are requesting your prompt consideration of this request. We welcome the opportunity to meet with the Commission Staff to provide further clarification of our request.

Sincerely,



Thomas P. Meinz
Power Supply & Engineering Executive

Attach.

KNPP STEAM GENERATOR REPLACEMENT SCHEDULE

3/15/96	Submit steam generator construction authorization application to PSCW
5/1/96	Finalize USI data set input assumptions
8/15/96	Compete economic analysis with USI assumptions/Kewaunee alternatives per CA application
10/96 - 12/96	Make adjustments to economic analysis based on fall 1996 refueling outage inspection results
	Initiate letter of intent and begin preliminary steam generator work
2/97	CA application hearings
4/97	Issue construction authorization
5/97	Initiate fabrication of steam generator process
	Award Phase II engineering constructor contract
3/98	Perform containment measurements and steam generator fit-up work
5/98	Construct interim steam generator storage building
6/99	Receive steam generators on site
10/99	Start 1999 refueling outage

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To The Public Service Commission of Wisconsin

Pursuant to the requirements of Section 196.49 of the Wisconsin Statutes and Chapter PSC 112 of the Wisconsin Administrative Code, Wisconsin Public Service Corporation hereby makes application for authority to procure and install replacement steam generators at the Kewaunee Nuclear Power Plant located in the Town of Carlton, Wisconsin.

Introdnction

This is an application for a certificate of authority filed by Wisconsin Public Service Corporation (WPSC), an owner of 41.2%, and the operator of the Kewaunee Nuclear Power Plant (KNPP). The construction authorization (CA) requested would authorize the Wisconsin utility owners of the KNPP to procure and install replacement steam generators at the KNPP, for an approximate total cost of $100 million.

The steam generator replacement project is necessitated by existing and projected plugging of steam generator tubes caused by corrosion and "cracking" phenomena which are described in greater detail herein. This tube plugging, at the now projected rate, could make continued economic operation of the KNPP problematic, and therefore unlikely, as early as 2002. This early shutdown cannot, based upon the current analysis, be avoided by maintenance and repair of the existing steam generator facilities. And, an effort to operate the KNPP under a steam generator repair strategy heightens the risk of an unscheduled, unforeseen plant shutdown -- a result with significant operating and financial risk consequences to the Wisconsin electric system and to the owners. A steam generator replacement accomplished by 1999 is consistent with continued economic operation of the plant, and also will reasonably assure continued economic operation until the end of the plant's licensed life.

The proposed steam generator project will preserve the nuclear fuel diversity and the reliable baseload performance of the KNPP until the second decade of the next century. The incremental

cost of the 563 MWs of capacity at Kewaunee (in the range of $100 million) is, this operator/applicant believes, a prudent, cost-effective system solution for meeting Wisconsin's projected power requirements for the period from 1999 to 2013.

Of course, in the current environment of reregulation and industry reorganization, different utilities have various views of what the power markets will be in the first decade of the next millennium. Those who project a continuation of the perceived existing short term glut of generating capacity for the next 15 years might conclude that the cost for the KNPP implicit in the proposed steam generator project is unappealingly high. On the other hand, a long term analysis based on valuing alternative sources of power at their reproduction cost yields the results comparable to the analysis in this application.

The owners of the KNPP do not, currently, share a consistent view of the power markets of the future. Therefore, all three owners do not, currently, share a consistent view of the economics associated with the proposed project. However, all the owners support the instant CA application and the need to maintain the option of continued operation of that nuclear plant. All of the owners agree that there are substantial benefits which will inure to the Wisconsin electrical system from a consideration by this Commission of the CA application. Because of the current owner disagreement about what the economics of the power market will be for the next 15 years, and therefore their different current view of the economic risks and rewards of the proposed project, they have not reached a consensus about whether each will agree to participate in the project if a CA is granted. This "ownership" issue is, however, dealt with by the willingness of WPSC to assume the ownership interest(s) of the other owners on an equitable basis. Therefore, if the requested CA is granted with reasonable conditions, and regardless of dissenting views about the economics and risks of the project between non-operator owners and WPSC at that time, WPSC stands ready to proceed with the approved project.

1.0 Project Background Information

The Kewaunee Nuclear Power Plant (KNPP) is owned by Wisconsin Public Service Corporation (41.2%), Wisconsin Power and Light (41%), and Madison Gas and Electric (17.8%). WPSC is the plant operator. The plant is a single unit, Westinghouse, two-loop, pressurized light water reactor (PWR) plant, providing steam to a Westinghouse tandem-compound turbine generator. Each loop contains a steam generator which transfers heat from the primary reactor coolant system water, to the feedwater used to generate steam for the turbine generator.

The two steam generators are Westinghouse model 51's, illustrated in Exhibit A. Heated reactor coolant water is circulated through the vertical U-tubes of the steam generators. Steam is generated by heating the feedwater outside of the tube bundle. The steam passes through the moisture separation equipment contained within the steam generator upper shell assembly, and then to the main steam system which directs the steam to the turbine generator.

Each steam generator contains 3388, 7/8 inch outside diameter, 0.050 inch thick, low temperature mill annealed Inconel Alloy 600 tubes that pass through a 21 inch thick tubesheet. The tube ends are hard rolled into the tubesheet and welded to the primary face leaving a crevice approximately 18 inches long and 7 to 8 thousandth of an inch wide around each tube. The tubing is supported by seven, 3/4 inch thick carbon steel tube support plates spaced at nominal 50 inch intervals. There is a 7 to 8 thousandth of an inch gap between the tube and the tube support plates. The upper U-bend portion of the tubing is supported by four carbon steel antivibration bars (AVB's). The tube bundle is enclosed in a steel wrapper that directs the feedwater and recirculated water down between the outside of the wrapper and the inside of the steam generator shell. This water enters the tube bundle at the top of the tubesheet and passes up through the bundle where heat from the reactor coolant generates steam.

Throughout the nuclear power industry, steam generators have been susceptible to a variety of corrosion mechanisms, many of which were not anticipated when the plants were designed. Low temperature mill annealed Inconel Alloy 600 tubing is susceptible to both inside diameter and outside diameter stress corrosion cracking. The inside diameter stress corrosion cracking, termed Primary Water Stress Corrosion Cracking (PWSCC), occurs in areas of high residual stress, e.g. hardroll transitions in the tubesheet and sleeve-to-tube joint, and tight radius U-bends. The Outside Diameter Stress Corrosion Cracking (ODSCC) occurs in areas of high residual stress and water/steam impurity concentration. High impurity concentrations develop in the crevices between the tube-to-tubesheet and tube-to-tube support plates where localized boiling occurs.

The nuclear power industry has supported significant research to develop corrective actions to mitigate Inconel Alloy 600 tubing corrosion and its consequences. WPSC has actively pursued a number of these corrective actions such as sleeving, changes in plant water chemistry to reduce impurity concentration and neutralize crevice chemistry conditions, and implementation of an alternate repair criteria for the tube-to-tube support plate intersections. The results of these actions have been effective in reducing the number of tubes plugged. However, although slowed, the corrosion mechanisms have not been completely arrested and continued tube plugging will be required. Exhibit B graphically shows the historical trend of steam generator tube repair (i.e., plugging and sleeving) required for each mode of degradation occurring in the KNPP steam generators.

As illustrated in Exhibit B, the current dominant form of degradation occurring in the KNPP steam generators is PWSCC at the sleeve-to-tube joint. Exhibit C illustrates a mechanical Westinghouse hybrid expansion joint (HEJ) sleeve typical of those installed in the KNPP steam generators. During the years 1988, 1989, and 1991, a total of 2197 HEJ sleeves were installed in the A steam generator and 2133 in the B steam generator. The HEJ sleeves were installed to form a new pressure boundary due to the ODSCC occurring in the tube-to-tubesheet crevice region. During the 1994 and 1995 refueling outages, non-destructive examinations of the tubes detected a significant number of indications in the

parent tube, predominantly in the lower hardroll transition of the upper joint. The location and total number of indications detected is illustrated in Exhibit D. Destructive examination and evaluation of two sleeve-to-tube joint samples removed from the B steam generator in 1995 concluded that the parent tube indications are due to PWSCC. The PWSCC is a result of a combination of high residual stresses from the sleeve installation process and susceptibility of the original Inconel Alloy 600 tubing.

The PWSCC in the upper sleeve-to-tube joint is projected to continue as a principle form of degradation in the KNPP steam generators. A license amendment request has been submitted to the Nuclear Regulatory Commission (NRC) providing technical justification to relocate the pressure boundary of the upper sleeve HEJ. If approved, approximately half of the HEJ sleeved tubes with indications could be acceptable for continued operation and potentially returned to service. (Exhibit E is a projection of future tube degradation assuming NRC acceptance of the relocated pressure boundary license amendment.)

As discussed in greater detail in Section 4, WPSC evaluated a number of different options available to address the continued tube degradation occurring in the KNPP steam generators. Among these were an early planned shutdown of KNPP, an early unplanned shutdown, repair methods to maintain generating capacity as long as possible, and replacement of the steam generators. WPSC's evaluation of the options and associated risks conclude that steam generator replacement in 1999 is the recommended alternative.

2.0 Reason for the Project

The KNPP is no longer operating at full rated capacity due to the extensive number of tubes that have been plugged. Steam generator tube repairs can be performed that will allow continued operation of the KNPP for a few additional cycles. However, as discussed in greater detail in Section 4.0, tube repairs are costly and there are a number of uncertainties associated with continued operation of the existing steam generators. The greatest uncertainty is the prediction of future tube degradation used to evaluate the alternatives. The prediction is based primarily on historical data. Experience at KNPP and other plants has been that degradation predictions used to forecast more than one or two cycles into the future tend to under predict the actual degradation rates. The under prediction is due to advances in inspection technology, failure to account for new forms of degradation, and the continued aging of a tube material that is susceptible to degradation. Therefore, continued operation with the existing steam generators exposes the plant owners to the possibility of a premature, unplanned shutdown of the KNPP. Replacement steam generators are the least cost and lowest risk option to restore the unit to full rated capacity, and allow continued operation until expiration of the current operating license in the year 2013.

Continued degradation will result in increased tube plugging and repair which in turn decreases the reactor coolant system flow margin and heat transferability of the steam generators. Presently, steam generator A is 24.94% effectively plugged and steam generator B is 17.69% effectively plugged for an average of 21.32%. The term effectively plugged includes the plugged tubes and the effect of the sleeves on the operating capacity of the steam generators.

The current KNPP safety analysis report allows an effective tube plugging limit of up to 25% average for both steam generators, not to exceed 25% in either steam generator. Analyses are currently being performed to increase the effective plugging limit up to 30%.

Evaluations are also underway to determine if the plant can safely operate at higher effective plugging limits, i.e. up to 35%.

2.1 Tube Plugging Projections

The projection of future tube degradation for the KNPP steam generators is based on prior inspection results, potential changes in NRC inspection requirements, improvements in eddy current technology, and an assessment of industry-wide operating experience from steam generators of similar design and operating characteristics.

Eddy current examination provides a non-destructive means of assessing the condition of the steam generator tubing. The data generated by eddy current analyses provides the basis for identification of tube degradation, and for predicting the initiation and progression of the corrosion processes. Exhibit B graphically shows a history of the tube repairs required for the various degradation mechanisms. Exhibit E is a prediction of future tube degradation based on the assumptions discussed below. The degraded tubes are required to be either plugged or repaired. Table 2.1.1 presents the corrosion mechanisms that have either been detected in the KNPP steam generators or, based on industry experience, are expected to occur.

Table 2.1.1

Kewaunee Steam Generator Corrosion Mechanisms

Location	Corrosion Mechanism	Basis for Projection
Hot leg tubesheet crevices	ODSCC	Active degradation mode; a linear projection of the recent inspection data is expected.
Tube support plates	ODSCC	Active degradation; tube plugging projection based on continued application of an alternate repair criteria. A slight increase in the number of tubes that will require plugging is being predicted based on potential changes in NRC inspection requirements.
HEJ upper sleeve-to-tube joint	PWSCC	Active degradation; continued PWSCC is predicted based on the 1994 and 1995 inspection results and findings at other plants with HEJ sleeves. The prediction of tube degradation shown in Exhibit E assumes NRC approval of the pressure boundary relocation license amendment.
U-Bends	PWSCC	Not a significant problem; predicting a few new indications each inspection based on prior findings.
Cold leg tubesheet crevice	PWSCC	Not detected yet at KNPP. Based on industry experience predicting that a few indications will be detected each inspection.
Anti vibration bars	Wear	Same as U-Bend PWSCC.

2.2 Projected Power Production Capability

The initial tube plugging at Kewaunee had no effect on the operating capability of the plant due to the reserve margin of the steam generators. The design of the steam generators allowed approximately 12% of the tubes to be plugged prior to any decrease in operating capacity. During the 1995 refueling outage a significant number of tubes were plugged, primarily due to the parent tube indications in the HEJ sleeved tubes. This extensive tube plugging resulted in an increase in the effective tube plugging from 11.87% to 21.32%, and unit operation at less than full rated capacity.

Exhibit F is a table of projected power output versus percent effective tube plugging. This correlation is based on the power levels following the 1994 and 1995 refueling outages. Reduction in megawatt output is due to decreased steam pressure caused by increased tube repair (plugging and sleeving) and fouling on the secondary side of the tubes. The fouling, caused by deposition of trace contaminants in the bulk steam generator water, impedes the heat transferability of the tubing.

3.0 Description of the Project

The steam generator lower shell assembly, including the tubing, channel head, shell and all interior components, will be replaced with new components. The upper shell assembly will be refurbished or replaced based on final component design. The major steps involved in replacement of the lower shell assembly are outlined in Exhibit G.

The tubing material will be thermally treated Inconel Alloy 690. Inconel Alloy 690 is the preferred tubing material for this service based on its superior material characteristics for this service and it is the current industry standard for replacement steam generators in the United States. However, additional tube surface area will be required to maintain the same operating performance due to the lower material thermal conductivity. A reserve plugging margin will be incorporated into the replacement steam generator design. This will provide the steam generators with enough reserve margin to operate at full rated capacity until the expiration of the current operating license.

The replacement steam generators will be designed to match the performance of the original steam generators. In addition, design improvements will be made to enhance flow distribution and reduce tube corrosion by minimizing areas of high residual stress and crevice locations where impurities concentrate.

3.1 Scheduling and Procurement

Many nuclear power plants in the world are at a stage where steam generator replacement is necessary for continued operation. To date, 12 nuclear power plants in the United States, and 17 plants in Europe and Japan have replaced their steam generators. Approximately 23 additional units world-wide are planning replacements prior to the year 2000. This large number of orders being placed is beginning to stress the limited number of potential component fabricators and material suppliers, in particular the tubing

manufacturers. In order to be assured of having replacement components available when needed, WPSC believes that it is prudent to place an order for replacement steam generators as soon as practical.

The expected outage duration for steam generator replacement is 12 weeks, including normal refueling and maintenance activities. The earliest planned refueling outage when the steam generator replacement could occur is in the fall 1999 assuming approval of the construction authorization is received by April 1997.

3.2 Project Cost and Financing

WPSC estimates that the total cost of the project will be approximately $100 million. All estimates are provided in year-of-occurrence dollars assuming replacement in the fall of 1999. A breakdown of the total costs is as follows:

Item	Amount
Steam Generator Hardware	$34,445,000
Facilities, Preliminary Engineering, Licensing, and Installation	$32,550,000
Removal Costs including Engineering	$28,870,000
AFUDC	$ 4,094,000
Total Capital Cost	$99,959,000

The cost of the project will be met from internal sources and/or from the issuance and sale of securities.

3.3 Description and Cost of Property Being Retired

The proposed facilities to be retired and their gross book costs are as follows:

Plant Account	Description	Book Cost Total 3 Company
322	Steam Generator	$2,114,172

4.0 Description of Alternatives

WPSC has used the extensive experience of the nuclear industry in the development of alternatives. Many alternatives, such as reducing operating temperature to reduce corrosion rates were assessed but are not described herein because the potential benefits are low relative to other alternatives. The following best represents all of the alternatives plus sensitivities for addressing the tube degradation occurring in the KNPP steam generators.

1) An unplanned shutdown of KNPP in the year 1998. This case is the bounding case for potentially unknown, undetected, or rapidly growing tube degradation. (Section 4.1)

2) A planned shutdown of KNPP in the year 2002 assuming NRC approval of the HEJ pressure boundary relocation which may be contingent on a planned mid-cycle shutdown in 1997 for sleeved tube inspections. (Section 4.2)

3) Repair of the degraded steam generator tubes in an effort to maintain generating capacity as long as possible. Under this alternative, the 30% effective tube plugging limit is exceeded in the year 2007. Should additional analyses determine the unit can safely operate at a 35% plugging limit, the effective tube plugging limit would be exceeded in the year 2008. (Section 4.3)

4) Replace the steam generators in the year 1999. Steam generator replacement covers replacement of the lower assembly, and replacement or refurbishment of the upper assembly. (Section 4.4)

4.1 Unplanned Shutdown of KNPP in 1998

This alternative assumes that either a new form of degradation is detected, or the rapid growth of a previously identified mechanism is found during the spring 1998 steam generator tube inspection. This alternative was considered for evaluation based on a number of recent industry experiences where new or rapid growth of degradation occurred. The increase in degradation may result from improvements in eddy current inspection hardware and software, heightened awareness of analysis personnel to be conservative when evaluating eddy current data, and continuous aging of the steam generator tube material.

For a bounding worst case scenario, it was assumed that the unit would be prematurely shut down during the spring 1998 refueling outage. Costs associated with this alternative which differ from other alternatives include the nuclear fuel write-off (unburned fuel remaining in the core) and replacement power costs (capacity and energy).

4.2 Planned Shutdown of KNPP in 2002 With NRC Approval of WPSC Requested HEJ Pressure Boundary Relocation

This alternative assumes NRC approval of the HEJ pressure boundary relocation with half of the HEJ sleeved tubes being unplugged and returned to service along with approval of tube and sleeve repair techniques. With this alternative, expenses include tube inspections, tube and sleeve repairs, and plugging. In addition, there will be expenditures for analytical work to prepare a number of license amendment requests, the associated NRC review fees, and a NRC required mid-cycle shutdown and inspection in 1997.

This alternative assumes KNPP is retired from service in 2002 when the 30% plugging limit is exceeded. A number of supply options for replacement of KNPP in 2002 were evaluated. The options are replacement with combustion turbines, combined cycle and coal-fired units located at greenfield sites, and as repowered units at the KNPP site.

The risks and uncertainties associated with this alternative are:

- The tube degradation prediction is based primarily on historical trend data. Experience at KNPP and other plants has been that degradation predictions used to forecast more than one or two operating cycles into the future are very uncertain and tend to under predict the actual degradation rate. The under prediction is due to advances in inspection technology, failure to account for new forms of degradation, and the continued aging of a tube material that is susceptible to degradation. Under this alternative there is a probability of either a new form of degradation occurring, or rapid growth of existing degradation leading to a premature unplanned shutdown of KNPP.

- The revised HEJ pressure boundary relocation must be approved by the NRC prior to the 1996 refueling outage. There is the potential that either the change will not be approved, or the approval will be delayed and not applicable until a later outage.

- The repair methods must be approved by the NRC prior to implementation. There is the potential for changes in regulatory requirements and delays in receiving approval. For example, sleeve repairs have never been approved by the NRC and may require a significant amount of review time and costs.

- Experience at KNPP and other plants has been that the repairs have a limited life. The repair may allow the affected tube to remain in service for a few additional cycles, but will subsequently develop stress corrosion cracking at the repair site and require tube plugging or additional repair work.

- The cost of performing the tube repairs is high. They include mobilization of equipment, additional personnel and increased outage time to perform the repair work and post-repair inspections. The analysis for this option was based on a best estimate repair cost and outage duration without contingencies. There is a high

probability that these estimates are on the low side, especially for the later years when more repair work will be performed.

4.3 Steam Generator Tube Repair With HEJ Relocation Approved: Plant Shutdown in 2008

This alternative reflects possible repair methods that could be employed to maintain steam generator operating capacity as long as possible. Even with NRC approval of the relocated pressure boundary for the HEJ sleeved tubes, tube and sleeve repairs will be necessary for continued operation of the unit beyond 2002. This alternative will result in longer outages to perform the necessary tube inspection and repairs, mid-cycle shutdowns for tube inspection in the later years, and high maintenance costs to perform the tube repairs. In addition, there will be expenditures for analytical work to prepare a number of license amendment requests and the associated NRC review fees.

The unit will exceed the 30% plugging limit in the year 2007. Additional analysis will be performed to determine if the unit can be safely operated at a greater than 30% effective plugging limit. For this alternative WPSC has assumed that a 35% plugging limit is achievable. Based on this assumption, the unit will be retired from service in 2008 when the 35% plugging limit is exceeded. A number of supply options for replacement of KNPP in 2008 were evaluated. The options are replacement with combustion turbines, combined cycle and coal-fired units located at greenfield sites, or as repowered units at the KNPP site. The risks and uncertainties associated with this alternative are the same as those discussed in Section 4.2.

4.4 Steam Generator Replacement in 1999

This alternative assumes replacement of the lower and upper shell assemblies. However, studies are continuing to evaluate refurbishment versus replacement of the upper shell assembly. The selected alternative will depend on the final steam generator design. Steam generator replacement will require a 12 week outage presently scheduled for fall 1999 to coincide with the planned refueling outage.

4.5 Recommendation

The recommendation to replace the steam generators in 1999 is based on an economic evaluation by WPSC of the four alternatives described in Sections 4.1 to 4.4. The economic evaluation compares the WPSC system costs for the period of 1997-2017 assuming WPSC's 41.2 percent ownership share of KNPP.

The WPSC economic evaluation results summarized in Table 4.5.1 support filing the CA application and further economic evaluation as part of the CA application review process. Filing the application at this time is necessary to preserve the alternative for replacement of the steam generators in 1999.

The KNPP co-owners have taken the next step in the economic evaluation process by coordinating planning assumptions and evaluation methodology. Each utility is conducting its own economic evaluation. The co-owners are communicating with the PSCW staff to prepare the Utility System Information (USI) and determine the evaluation methodology that the PSCW staff would use in the evaluation of the alternatives as part of the CA application assessment. The plan is for the co-owners to work with the PSCW similar to the process used in the 1994 WPSC capacity bidding program. This plan includes preparing a USI and evaluation methodology which appropriate parties would have an opportunity to comment on before the PSCW makes the final determination of the USI and evaluation methodology.

The evaluation of alternatives as part of the CA application assessment will be conducted in two steps. The first step is to establish the USI and evaluation methodology and complete a "dry run" economic evaluation before the fall 1996 refueling outage. Information from the fall refueling outage would be used to update input assumptions for the economic evaluation in the second step. By completing the first step prior to the fall 1996 outage, several months on the schedule could be cut allowing for CA planned for April 1997 with steam generator replacement in the fall of 1999 maintained.

Table 4.5.1

Difference in Accumulated Discounted Revenue Requirements with Planned Shutdown in 2002 Alternative

Alternative Compared to Planned Shutdown in 2002	Accumulated Discounted Revenue Requirements (Millions)
Steam Generator Replacement in 1999	(-) $40.3
Early Unplanned Shutdown 1998	(+) $39.6
Continued Repair	(-) $21.0

System plans were developed for each Kewaunee alternative. The planned 2002 shutdown alternative was selected as the reference. The remaining alternative plans were compared to the reference.

5.0 Effect of tbe Project on Cost of Operation and Reliability of Service

Wisconsin Public Service Corporation believes that the proposed project is the most advantageous means of discharging its obligations as a public utility. Replacement of the steam generators will maintain the efficiency and reliability of WPSC's service. It will not provide facilities in excess of present or probable future requirements. When placed in operation, the facility will not result in annual costs disproportionate to the value of the facility to system operations. The project will facilitate continued fuel diversity for the system, will permit continued economic operation of a significant base loaded generating plant and avoid the need to operate other existing or not yet constructed generating plants with less advantageous environmental effects per kilowatt hour of production. The project is consistent with least cost system planning.

6.0 Entities Affected by tbe Project

Entities affected by the project are the Nuclear Regulatory Commission, certain state governmiental agencies, the town of Carlton, and Manitowoc and Kewaunee Counties. All entities will be notified of the proposed project.

7.0 Flood Hazard Exposure/Impact

The location of the proposed facility is not within a flood hazard area.

8.0 Otber Considerations

This section presents three other issues that could potentially impact the future operation of the KNPP. These are the disposal of high level nuclear waste, reactor vessel integrity, and other capital requirements through the year 2013.

8.1 High Level Nuclear Waste Disposal

Due to the uncertainties regarding the inception of waste acceptance by the Department of Energy, a number of utilities have had to find means to supplement their on-site capacity for spent fuel storage. Eight utilities to date have constructed dry cask storage containers at their reactor sites to provide additional spent fuel storage.

The KNPP has additional storage capacity in its spent fuel pool which can be made available by adding fuel storage racks to the pool canal area. Although detailed engineering analyses have yet to be completed, this area has the potential to provide additional storage to handle the discharge needs to the end of licensed life. Therefore, dry cask storage containers will not be required to accommodate high level waste storage needs through the end of the current operating license.

8.2 Reactor Vessel Integrity

WPSC has responded to a number of generic requests for information from the NRC staff regarding integrity of the KNPP reactor vessel. Using existing NRC guidance to assess the data, there is adequate reactor vessel integrity through the end of the current operating license.

8.3 Other Capital Requirements Through 2013

A review to identify other major capital improvements potentially required to operate KNPP until 2013 identified a $10 million capital improvement for replacement of the relay protection racks. No other major capital improvements were identified.

Exhihit A

Westinghonse Model 51

Steam Generator

MAIN STEAM
Steam Generator

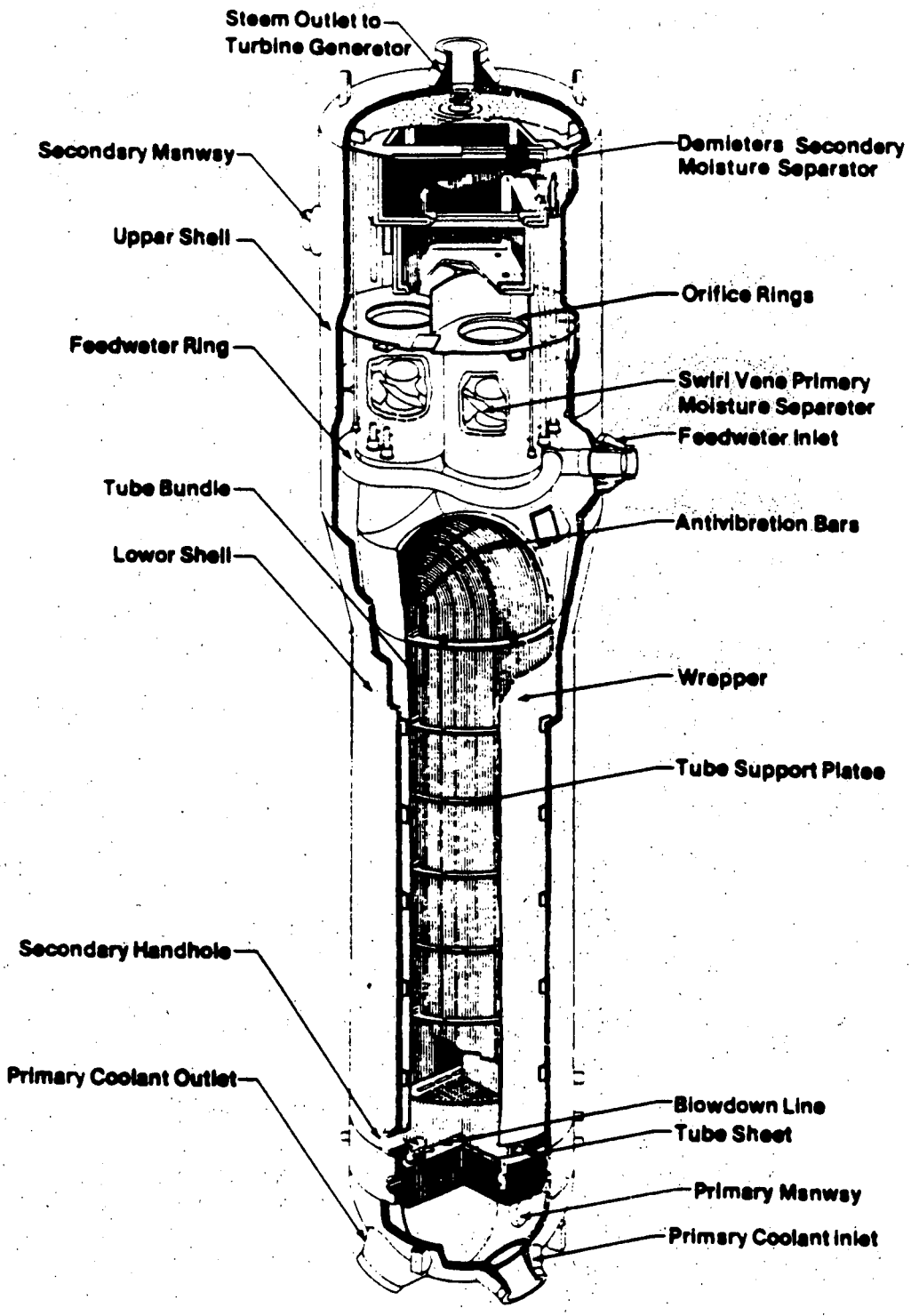
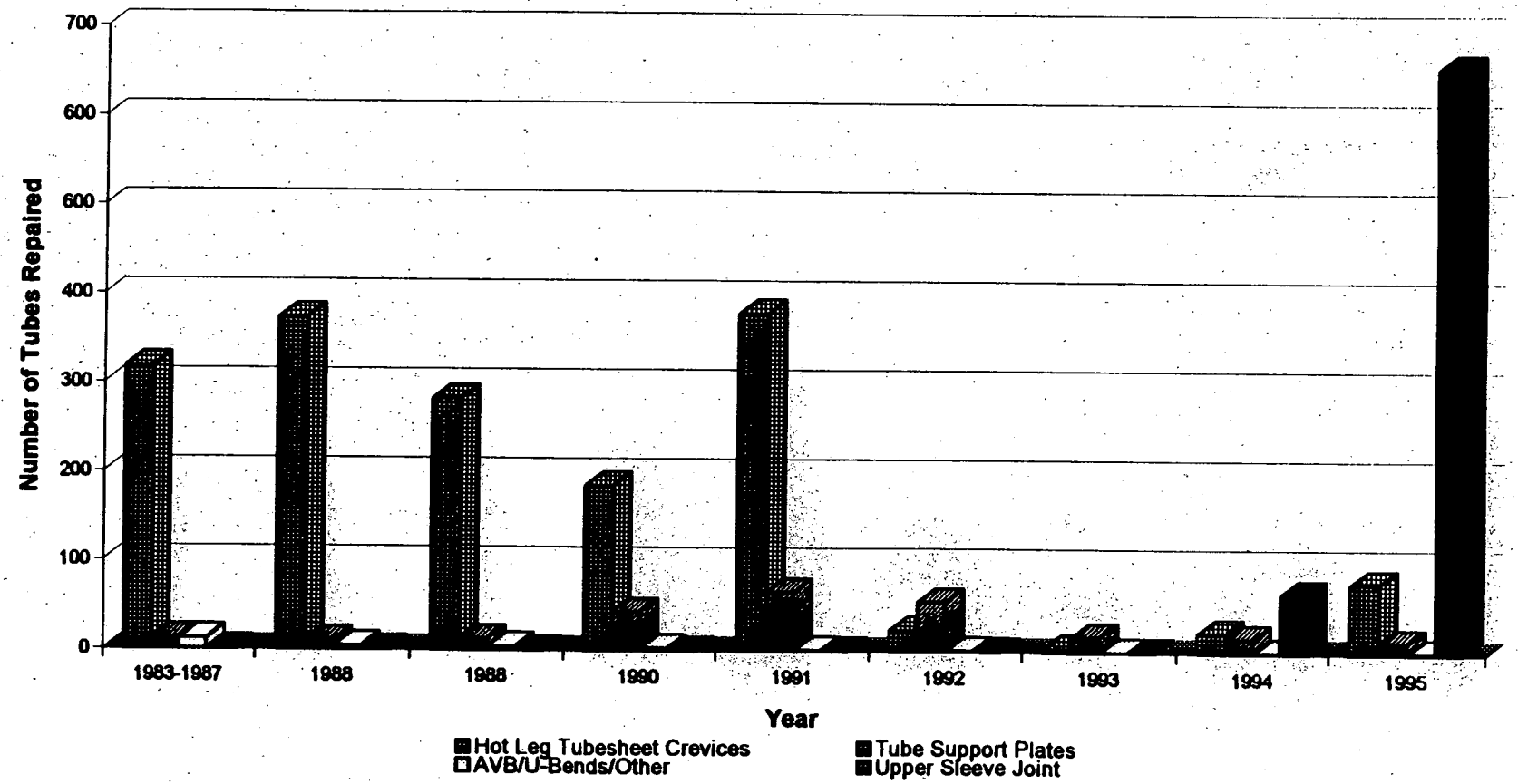


Exhibit B

Historical Steam Generator Tube Repairs

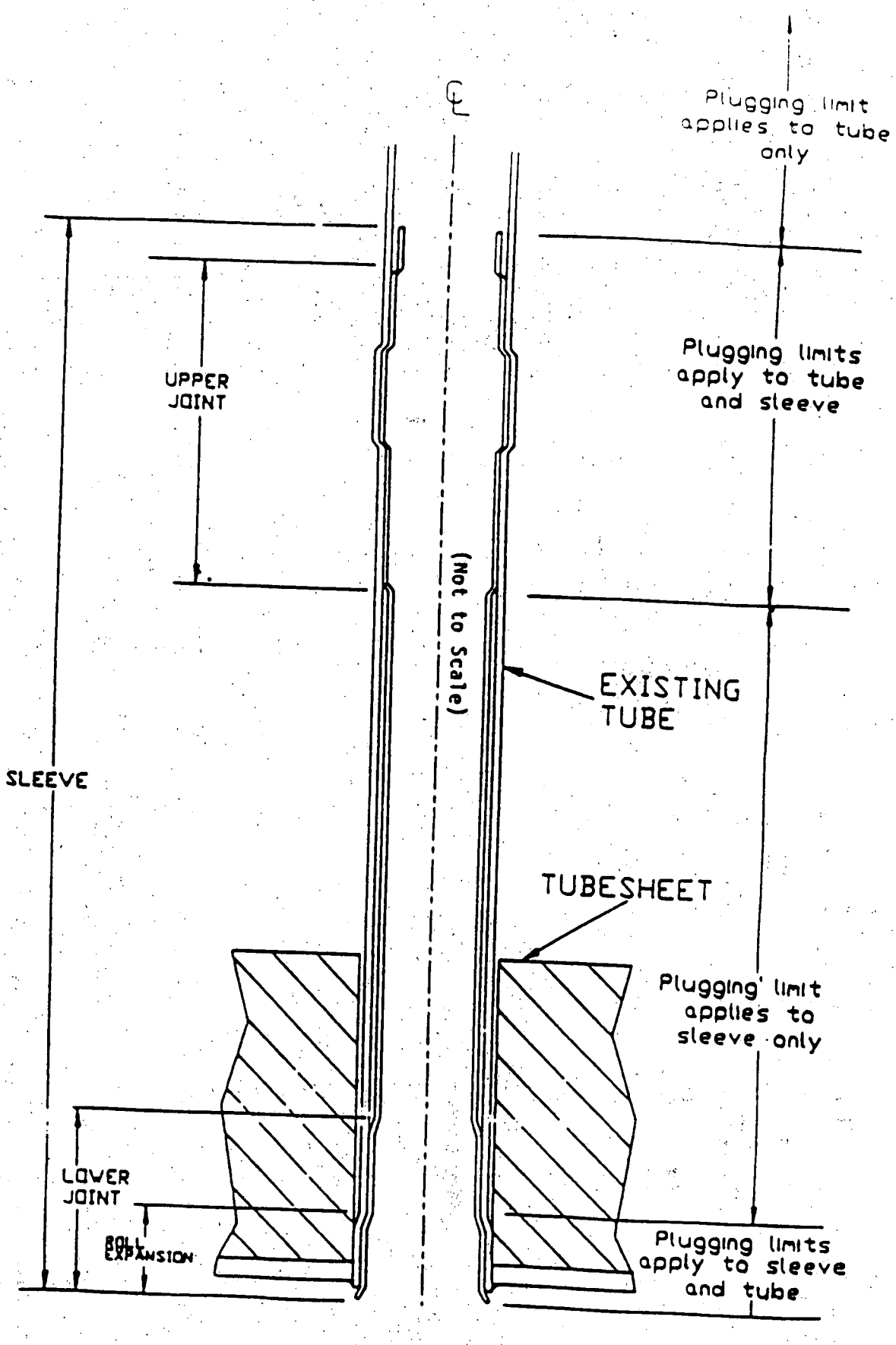
HISTORICAL STEAM GENERATOR TUBE REPAIRS

Displayed By Mechanism



Exhihit C

Westinghouse Mechanical Hybrid Expansion Joiut (HEJ) Sleeve



APPLICATION OF PLUGGING LIMIT FOR A WESTINGHOUSE MECHANICAL SLEEVE

Exhibit D

Location aud Number of Pareut Tube Indications

Location of KNPP HEJ Indications

Upper Hydraulic Transition
5 Indications

Upper Hardroll Transition
0 Indications

Lower Hardroll Transition
718 Indications

Lower Hydraulic Transition
103 Indications

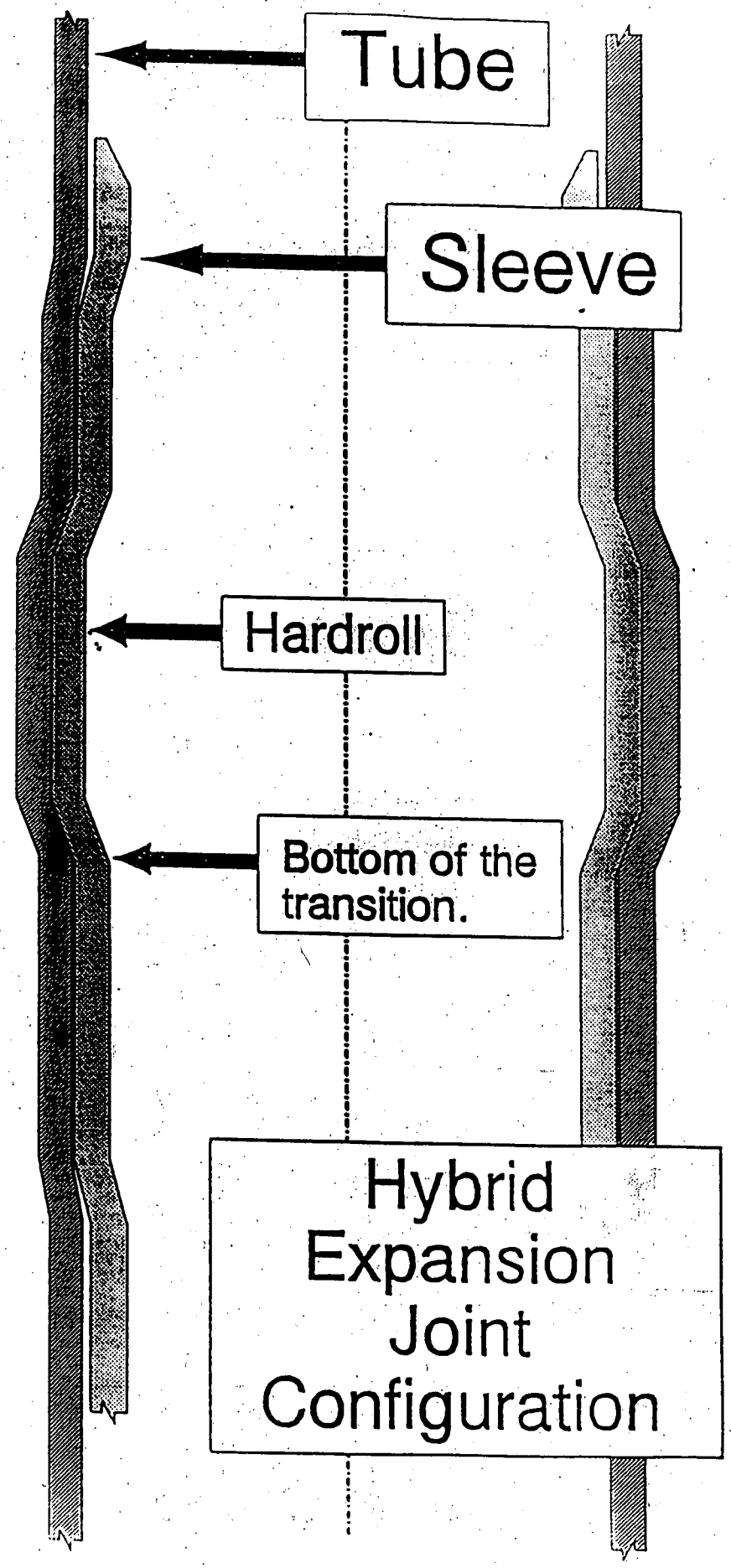
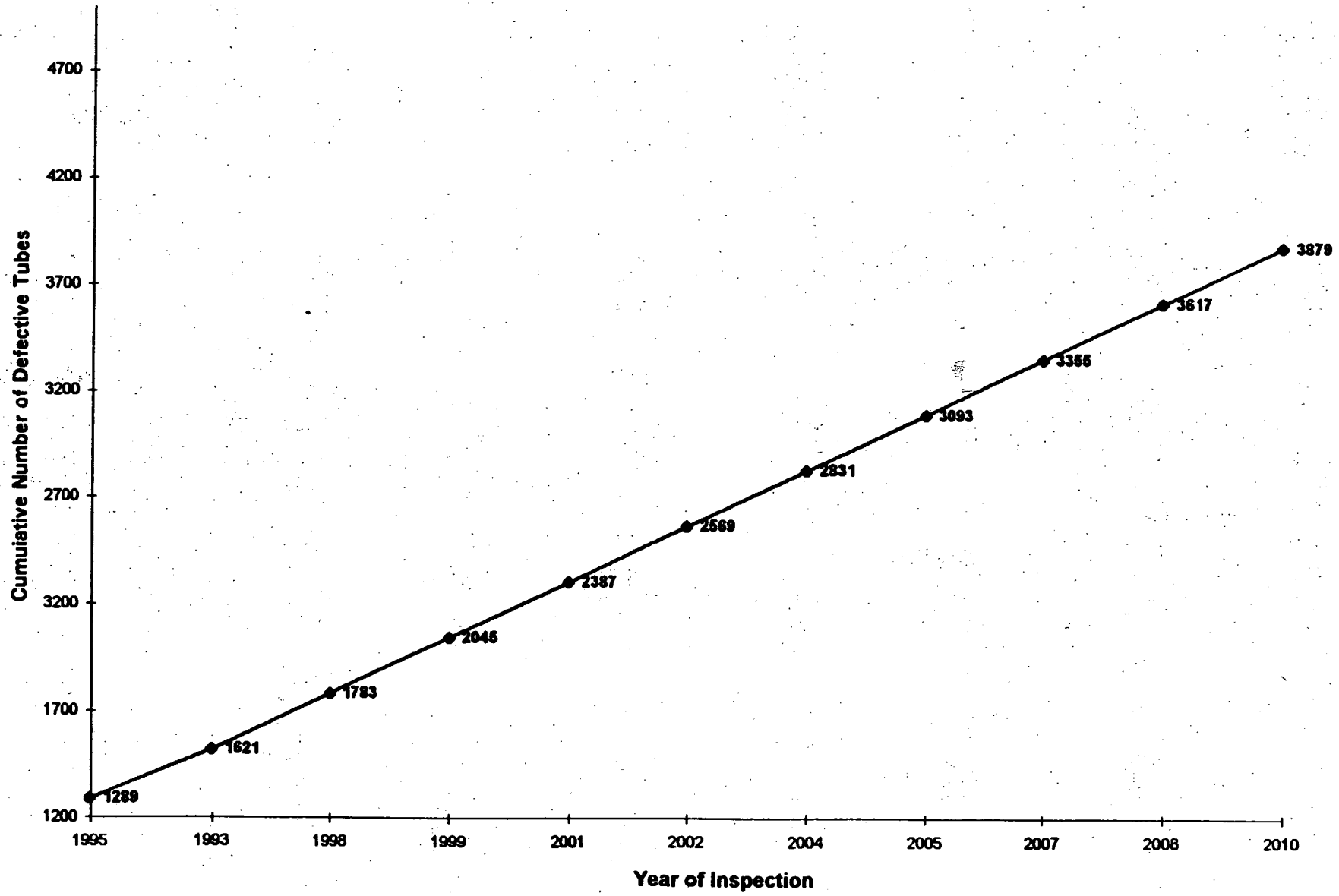


Exhibit E

Projected Treud of Tube Degradatiou

PROJECTION OF STEAM GENERATOR TUBE DEGRADATION



wpfiles\sg\wpsreprt\projtube.xls

Exhibit F

Table of Projected Power Output Versus Percent Tube Pluggiug

Projected Power Output Versus Percent Tube Plugging

Percentage Plugged	Power Output
5%	100%
10%	100%
15%	99%
20%	97%
25%	94%
30%	90%
35%	85%
> 35%	0%

Exhihit G

Major Steps of Lower Assemhly Replacement

Major Steps For Steam Generator Lower Assemhly Replacement

1. Cut all the piping connections at the steam generators. Remove instrumentation and insulation.

2. Cut steam generators at the transition cone above the tube bundle.

3. Remove the upper shell from containment and transport to the storage building.

4. Disconnect steam generator supports.

5. Remove the lower section of the steam generator from containment and transport to the storage building.

6. Move the replacement lower section from storage into containment and lower onto the supports.

7. Weld reactor coolant piping to the replacement steam generator.

8. Install the upper section of the steam generator with moisture separation equipment and weld to the lower section.

9. Reconnect the main steam, feedwater and auxiliary piping and replace instrumentation and insulation.

10. Perform non-destructive examination of welds and hydrostatically test the installation, as required.

ENVIRONMENTAL SCREENING REPORT

KEWAUNEE NUCLEAR POWER PLANT STEAM GENERATOR REPLACEMENT

Table of Contents

Figures

1.0 Project Need

Wisconsin Public Service Corporation, as operator and co-owner of the facility proposes to procure and install replacement steam generators at the Kewaunee Nuclear Power Plant, located in the Town of Carlton, Kewaunee County, Wisconsin, in the year 1999.

The Kewaunee Nuclear Power Plant is a two loop, closed cycle, pressurized water reactor plant licensed at 1650 megawatts thermal, producing a nominal 530 megawatts net. The power plant has a single unit, Westinghouse model, two loop, closed cycle, pressurized light water reactor plant, providing steam to a Westinghouse tandem compound turbine generator. Each loop contains a steam generator which transfers heat from the reactor coolant to water used to generate steam for the turbine generator. Cooling water flows in a third independent loop from Lake Michigan through a condenser and back to Lake Michigan. The current operating license for the Kewaunee Nuclear Power Plant expires December 21, 2013.

Due to tube corrosion, replacement of the steam generators is needed to maintain rated capacity through the expiration of the Kewaunee Nuclear Power Plant's operating license.

Steam generator replacement will also maintain design margins on reactor coolant flow, reduce recurring operation and maintenance expenses, reduce occupational radiation exposure from annual steam generator examinations, and maintain plant life extension as a viable option for the future.

For a detailed description of the Kewaunee steam generators refer to Section 1.0, "Project Background Information" of the Application. For a detailed description of the reasons the steam generators require replacement refer to Section 2.0, "Reason for the Project" of the Application.

2.0 Description of the Proposed Project

2.1 Proposed Steam Generator Replacement

The steam generator replacement project is scheduled to occur in three phases: equipment procurement, engineering, and construction. The steam generator replacement project consists of activities to plan, stage, disassemble and decontaminate, remove and store the two existing steam generators, install and assemble the two replacement steam generators, and return the site to its currently existing condition. Upon the completion of the steam generator replacement project, the power plant site will include an interim steam generator storage facility.

2.2 Location and Layout

The replacement steam generators will be installed within the existing Kewaunee Nuclear Power Plant containment structure, identified on the Main Plant Complex and Substation drawing (Figure 1). Construction power requirements within containment will be supplied from on-site sources.

2.3 Site Preparation

A temporary foundation for a Mock-up\Fab Shop and an extension to an existing Warehouse Building will be constructed west of the plant. The Interim Steam Generator Storage Facility will be constructed inside the plant protected area. These facilities will be on land disturbed during initial construction and are shown on Figure 1. Underground utilities such as fire water lines, buried gas tanks, and other utilities will be protected or relocated as necessary. High mast lighting will be relocated as required. The electric service trench from the auxiliary building

to the substation will be bridged for the construction traffic. All site grading modifications will maintain proper storm drainage using the State of Wisconsin, Construction Site Best Management Practices Handbook as a guide.

2.4 Construction of Support Facilities

The steam generator replacement project will require construction of three support facilities including: a Mock-up/Fab Shop, an extension to an existing Warehouse Building, and an Interim Steam Generator Storage Facility. The other project facilities shown on Figure 1 are existing facilities being allocated to the project as needed. In addition, temporary trailers will be used for construction management. The proposed location of the facilities are approximate and will be finalized during the engineering phase of the replacement project.

The new support facilities will be pre-engineered buildings and will include utilities, plumbing, lighting, HVAC, and fire suppression as appropriate. The location of these proposed facilities were disturbed during original power plant construction and is relatively flat and free of trees making the areas suitable for this temporary use. The proposed facility locations are currently a combination of a graveled parking lot, slabs leftover from original construction facilities and a portion of the sodded lawn south of the Site Training Facility. The Interim Steam Generator Storage Facility will be located inside the protected area that is currently covered with grass. Sanitary systems for temporary facilities will be self contained with holding tanks that will require periodic pumping for disposal by licensed contractors during the project, or will be routed to existing power plant sanitary systems if capacities allow.

Following are descriptions of the support facilities:

2.4.1 Mock-up/Fab Shop Facility

The Mock-up/Fab Shop Facility is a 6,500 sq. ft. single story building. The mock-up portion of the facility consists of the required space for mock-up training. Mock-up training is used to practice work techniques outside containment in order to minimize stay time in the containment area. The fab shop portion of the facility consist of the required space for shop facilities and necessary utilities based on the project requirements. Activities requiring shop space include fabrication of spool pieces, assembly of sub-components, specialty equipment, etc. This will be a temporary building constructed on a concrete slab. The Mock-up\Fab Shop, as shown in Figure 1, will be located west of the protected area immediately south of the Site Training Facility. Sanitary drains will be routed to a temporary holding tank for periodic pumping and off-site disposal during the replacement activities.

2.4.2 Warehouse Building Extension

The Warehouse Building Extension will add approximately 4,200 sq. ft. to the existing Warehouse No. 1 located west of the protected area and south of the Site Training Facility. It will be used to store construction materials other than the replacement steam generators.

2.4.3 Interim Steam Generator Storage Facility

This facility is the temporary vault for the storage of the old Steam Generators following thcir removal. The building will be approximately

58'x43' (2500 sq. ft.) erected on a concrete slab. The building is sealed and will require no forced ventilation. There will be no drains from the facility and the building will have a watertight roof, floor, and walls. Minimal lighting is provided to permit inspection. There are floor drains to a sump tank or the floor is sloped to a catch basin to collect any interior water for sampling prior to discharge. There will be a small vestibule providing entry for future periodic radiological monitoring. Entry would be strictly controlled under the confined space program. The wall thickness will be established to conservatively bound the radiological dose rates. The preliminary site for the building is the NW corner inside the fence.

The location and shielding provided by the storage facility will be designed to limit the dose rate to less than 10CFR 20.1301. The Kewaunee Nuclear Power Plant will provide a radiological monitoring program as well as security procedures and monitoring for the facility.

2.4.4 Temporary Trailers

All temporary trailers will be located on previously graded land, either in the north parking lot area, or within the protected area where space will allow. Power for temporary trailers will be supplied from off-site or on-site sources as available and proximity dictate.

2.5 Replacement Steam Generator Delivery

Replacement steam generators will be shipped to the City of Kewaunee by railroad. A tractor/trailer specially designed for heavy loads will be used to transport the replacement steam generators from Kewaunee to the plant site using U.S. Highway 42. This mode of transportation from the City of Kewaunee is similar

to the method used during the original plant construction. Appropriate local and state transportation agencies will be consulted prior to transportation to determine the detailed route to be used and the specific traffic controls and other necessary requirements. The existing highway and local road and street network of the area provides alternate routes to be taken during major haul evolutions. WPSC will consult with Wisconsin DOT to secure all necessary approvals for transportation of the steam generators on Highway 42.

2.6 Replacement Description

The new steam generators would contain tubing made of thermally treated Inconel 690 and would have design improvements to avoid flow stagnation on the center of the top of the tube sheet. Inconel 690 has more chromium in its alloy of nickel-chromium-iron than Inconel 600. Thermally treated Inconel 690 is more corrosion resistant than the original Inconel 600 used in the existing steam generators. However, Inconel 690 has a lower heat transferability than Inconel 600. To offset this, more tubes are in the new steam generators. Tubes would be expanded for the full depth of the tubesheet to eliminate a crevice found in the existing steam generators. In addition, tube bundle access will be improved and maintenance and in-service inspections will be easier.

The first step in the steam generator replacement process is to remove the thermal insulation from the steam generators. Next, all piping and tubing connections are cut. The cut ends of piping to be connected to the new steam generators are covered to keep dirt and foreign objects out. The ends of the reactor coolant piping are covered with lead blankets to reduce occupational exposure to radiation. The steam generator is then cut above the transition cone to separate the upper and lower assemblies. The steam generator remains full of water (secondary side) until the final cut above the transition cone is made. The water reduces the radiation

exposure of the workers. Each upper shell is removed from the reactor containment building and moved to the interim storage facility. Steel caps are welded over all opening in the lower part of each steam generator. Openings in the upper shell will be covered during movement to the storage facility. The steam generator supports are disconnected from the lower part and the lower part is removed to the storage facility. The replacement lower part is then moved into the containment and lowered on to supports. The reactor coolant piping will be welded onto the lower part of the steam generator. The upper part is moved into containment and welded to the lower part. All piping will be connected and instruments and insulation replaced. The welds will be inspected and the complete replacement steam generator tested under pressure to detect leaks.

2.7 Manpower Requirements

Manpower needs will vary during the project. The total contractor force required on-site to support steam generator replacement is expected to be about 300, with the peak occurring during the replacement outage itself.

2.8 Project Schedule

Preliminary work for the steam generator replacement project is scheduled to begin in 1996, with the actual replacement activities scheduled for October, 1999. Detailed engineering, site preparations, and craft and technician training are scheduled to be performed in parallel with replacement steam generator fabrication.

The expected outage duration for the steam generator replacement project is less than 12 weeks including normal refueling and maintenance activities.

2.9 Project Costs

Wisconsin Public Service Corporation estimates that the total gross cost for the project will be approximately $100 million. All estimates are in year of occurrence dollars, and are detailed as follows:

Item	Amount ($)
Steam Generator Hardware	$34,445,000
Facilities, Preliminary Engineering, Licensing, and Installation	$32,550,000
Removal Costs including Engineering	$28,870,000
AFUDC	$4,094,000
Total Capital Cost	$99,959,000

The steam generator replacement project will be financed with internally generated funds and/or from the issuance and sale of securities.

2.10 Replacement Steam Generator Design Improvements

The replacement steam generators will be functionally identical to the existing steam generators. The dimensions of the replacement steam generators will be as close as possible to the existing steam generators in order to minimize costs associated with attached system modifications. The weight and center of gravity of the replacement steam generators will be sufficiently similar to the existing design to satisfy existing support and seismic criteria. The replacement steam generator shell, channel head, nozzles and internals will, however, include design

enhancements resulting from industry experience and research and development to alleviate problems encountered with current designs. These features include:

- Drawn, Thermally Treated, Inconel Alloy 690 (TT 690) Tubing
- Full Depth Expansion of the Tubes in the Tubesheet
- Stainless Steel Tube Supports
- Higher Recirculation Ratio
- Close Tolerance Antivibration Bars
- Forged Channel Head with Integral Nozzles
- Feedwater Nozzle Thermal Sleeve

3.0 Description of the Existing Environment

3.1 General Description of Locale

The Kewaunee Nuclear Power Plant site is in the Town of Carlton in the southeast corner of Kewaunee County, Wisconsin, on the west shore of Lake Michigan. The city of Green Bay is about 27 miles WNW of the site. Milwaukee is about 90 miles to the SSW. It is located at longitude 87° 32.1° W and latitude 44° 20.6° N. The closest distance to the international boundary between Canada and the United States is approximately 200 miles northeast of the site.

Farming is the dominant land use around the site with dairying, raising livestock, and growing feed crops most common. There are heavy industrial areas to the south of the site in Two Rivers and Manitowoc and west in Green Bay and the Fox Valley.

The plant site encompasses an area of 906 acres of which approximately 10% are currently in active use to support the operation of the existing generating unit and auxiliary facilities. Approximately 3.9 acres between the plant protected area and the substation that were disturbed during original construction will provide temporary service during the steam generator replacement project (see Figure 1).

Most of the remainder of the Kewaunee Nuclear Power Plant property is cultivated for agricultural crops located both on high, dry sites, and low lying valleys. Areas previously cropped but now entered in the cropland reserve program are characterized by steeper slopes and have reverted to "abandoned fields". Water resources include the Lake Michigan shoreline, creeks, and intermittent drainage ravines. A limited amount of wetlands exist in the area partially due to the drain tiling of most lower elevation areas for agricultural purposes.

A forested area, known as the "school forest" is located south of the existing power plant site. The school forest is generally a mature, to over mature, forest consisting of mixed northern hardwood species (i.e . ash, maple, oak, beech, and birch) of uneven age. Some pockets of lower terrain in combination with heavy soils have resulted in stands of black ash. There are also two pure stands of mature white pine (10" - 16" diameter).

The area north of the main plant complex and the North of fisherman's parking lot is characterized by an irregularly shaped pond, ridges, and a tiered valley stretching from U.S. Highway 42 and Lake Michigan. This area includes the Carlton Trails Park. Found along the valley are northern hardwoods, with white ash being the primary species. Other small woodlots in the area support white cedar, white spruce, red pine, willow, and aspen. See Figure 2 for the location of the agricultural and forested areas found on the Kewaunee Nuclear Power Plant property.

3.2 Climate

The climate of the area is continental, meaning cold winters and warm summers. Lake Michigan causes cooler spring and summer and warmer fall temperatures than occur a few miles inland. The wind is from the lake onto the land about 34 percent of the time. The wind is from the shore to the lake about 64 percent of the time. In the spring and summer, the most common winds off the lake are from the north northeast. Summer winds are mostly from the northwest and winter winds are from the northwest or south southwest. The historic high temperature in Kewaunee County is 105 degrees. The historic low temperature was -28 degrees in 1951. The expected highest wind speed occurring once in one hundred years is 108 mph. Between 1950 and 1990, 6 tornados were seen in Kewaunee County and 13 in Manitowoc County.

3.3 Physical Environment of Project Area

The proposed steam generator replacement project construction activities will take place inside the existing containment structure as well as west of the main plant, east of the plant substation, and inside the protected area (see Figure 1). These areas were previously disturbed during the construction of the plant where they were used for construction parking and a batch concrete plant. Some of this area has reverted to grass and shrub vegetation. Some of the area was previously graveled and currently provides overflow parking space (see Figure 1).

3.3.1 Topography and Soils

The topography of the Kewaunee Nuclear Power Plant site is shown on the attached topographical map, Figure 2. Overall ground surface at the site is gently rolling to flat, with elevations varying from 10 to 100 feet above

the level of Lake Michigan. The land surface slopes gradually toward Lake Michigan from the higher glacial moraine areas west of the site.

The subsurface soils at the site consist of glacial drift (glacial till and glacial lacustrine deposits) which is primarily stiff to hard silty clay. The glacial soils range in thickness from 60 to 150 feet and are variable with respect to engineering properties. Several hundred feet of sound dolomite forms the upper bedrock at the site.

General soils information was obtained from the United States Department of Agriculture Soil Conservation Service "Soil Survey of Kewaunee County, Wisconsin", published by the Soil Conservation Service of the United States Department of Agriculture in 1977. It shows the proposed project area to be comprised of Udorthnet soils with 0 to 6 percent slopes. The soils in the proposed project area have been altered by excavating, filling, or leveling. These soils are commonly loam, but may range from clay to sand or gravel.

3.3.2 Hydrology (surface and ground water)

There are no surface water drainage features associated with the proposed construction area. Surface drainage features found on Kewaunee Nuclear Power Plant property include three small streams. One stream discharges into Lake Michigan about 1000 feet south of the center of the property. A second stream discharges about 600 feet north of the center of the property. The third stream discharges into the Lake Michigan approximately 100 feet from the northern property boundary. Natural drainage is poor due to the high clay content of the soil combined with the pockmarked surface (see Figure 2).

At the northern and southern edges of the property, bluffs face the Lake Michigan shore and near the center of the property, the shoreline slopes to a sandy beach.

The static ground water level inland from Lake Michigan ranges from 10 to 25 feet below the ground surface. The water table on the property generally slopes to the east, indicating a migration of ground water towards the lake. At the base of the bluffs, ground water levels are controlled by the elevation of Lake Michigan. The regional movement of ground water is from west to east. Fluctuations of Lake Michigan are not of sufficient magnitude to affect the direction of ground water movement.

3.3.3 Coastal Erosion

In the early 1970's, lake storms were cutting back the base of the shoreline bluffs at a rate of 2.5 to 5 feet per year. If climate change causes the level of Lake Michigan to rise, the rate of erosion would increase. If climate change causes the level of Lake Michigan to drop, the rate of soil erosion would decrease. The shoreline area in front of the power plant and proposed construction area is protected by stone riprap to minimize lake erosion effects.

3.3.4 Floodplain

There are no large rivers or streams in the vicinity of the site. The major part of the site is 20 feet or more above the normal Lake Michigan level, and there is no record that it was flooded by the Lake Michigan at any time in modern history.

3.3.5 Air Quality

The Kewaunee Nuclear Power Plant is located in an Ozone non-attainment area.

Electrical generation at the Kewaunee Nuclear Power Plant uses a nuclear fuel supply. Generation of electrical power using this fuel does not result in the emissions of SO_2, NO_x, CO_2, particulate material, or ash. As a result, the air quality of the Kewaunee Nuclear Power Plant site is not adversely impacted by the normal operation of the facility.

The Kewaunee Nuclear Power Plant Nuclear plant does have certain safety and ancillary equipment that is fossil fueled. There are three diesel generators and a fuel oil heating boiler on-site that are necessary to support plant emergency operation. In addition, vehicular traffic on the site has an impact on the quality of air.

The three diesel generators are intended to provide a backup source of electrical power in the event that off-site power is not available. These generators are not operated to support normal plant electrical generation. The generators are, however, periodically tested to verify their functionality, and do create emissions during the test period. These emissions were previously addressed in Wisconsin Department of Natural Resources Permit Numbers 92-IRS-032 and 431022790-501.

The Kewaunee Nuclear Power Plant relies upon an auxiliary, fuel oil fired, heating boiler to provide local area heating during periods of plant shutdown. Emissions from the heating boiler were previously addressed in Wisconsin Department of Natural Resources permit number 431022790-501.

3.3.6 Radiological

The radiological consequences for the current operation of the Kewaunee Nuclear Power Plant were previously subjected to reviews by the Wisconsin Public Service Commission and the Nuclear Regulatory Commission prior to the facility being licensed. It was demonstrated that the operation of the Kewaunee Nuclear Power Plant resulted in acceptably low radiological exposures to both the general public and the site workers. Since the original licensing reviews, the Kewaunee Nuclear Power Plant has adopted an aggressive approach to minimizing both radioactive exposure dose to the general public and site personnel, and the reduction of radioactive waste. This approach is known by its acronym "ALARA", meaning "as low as reasonably achievable."

The success of the ALARA approach at the Kewaunee Nuclear Power Plant site is demonstrated by its routine performance ranking in the top 20 percent of industry average (see Table 3.1).

Table 3.1
Pressurized Water Reactors
Collective Radiation Exposure Per Unit Three Year Rolling Average 1994 Actual

UTILITY	PLANT	NSS	COLLECTIVE RADIATION EXPOSURE PER SITE (Person-REM or Person cSv)							THREE YEAR ROLLING AVERAGE PER UNIT	COMMENTS
			1988	1989	1990	1991	1992	1993	1994		
NORTHERN STATES POWER	PRAIRIE ISLAND 1&2	WEST	200	100	188	98	216	106	109	72	
SOUTH TEXAS PROJECT	SOUTH TEXAS 1&2	WEST	0	161	206	258	140	251	48	73	
NORTHEAST NUCLEAR ENERGY CO.	SEABROOK 1	WEST	0	0	6	92	135	6	113	85	
GPU NUCLEAR CORPORATION	TMI 1	B&W	210	54	264	198	34	206	40	94	
WISCONSIN PUBLIC SERVICE	KEWAUNEE	WEST	210	239	145	221	113	105	74	97	
NEW YORK POWER AUTHORITY	INDIAN POINT 3	WEST	93	876	358	40	194	53	58	102	
WISCONSIN ELECTRIC POWER	POINT BEACH 1&2	WEST	410	504	378	266	256	186	177	103	
TU ELECTRIC	COMANCHE PEAK 1&2	WEST	0	0	8	148	163	102	92	119	
COMMONWEALTH EDISON	BRAIDWOOD 1&2	WEST	75	296	186	550	226	273	299	133	
ENTERGY OPERATION. INC.	WATERFORD	CE	259	245	39	345	210	14	187	137	
OMAHA PUBLIC POWER DISTRICT	FT. CALHOUN	CE	272	93	290	57	256	157	23	145	
COMMONWEALTH EDISON	BYRON 1&2	WEST	458	192	434	268	199	432	280	152	
WOLF CREEK NUCLEAR OPER. CO.	WOLF CREEK	WEST	297	18	195	331	66	168	230	155	
CAROLINA POWER & LIGHT	HARRIS	WEST	169	156	85	226	213	31	222	155	
DUQUESNE LIGHT COMPANY	BEAVER VALLEY 1&2	WEST	530	1378	348	496	272	621	44	156	
DUKE POWER COMPANY	OCONEE 1,2,&3	B&W	870	684	405	552	654	236	527	157	
CENTERIOR ENERGY	DAVIS BESSE	B&2	307	38	489	216	20	348	134	167	
SOUTHERN NUCLEAR OPERATING CO.	VOGTLE-1&2	WEST	138	32	466	362	426	367	216	168	
DUKE POWER CO.	CATAWBA 1&2	WEST	556	334	810	462	394	410	206	168	
PUBLIC SERVICE ELECTRIC & GAS CO.	SALEM 1&2	WEST	504	338	272	459	416	413	188	170	
INDIANA & MICHIGAN ELECTRIC CO.	DC COOK 1&2	WEST	936	494	580	70	492	44	485	170	
ARIZONA PUBLIC SERVICE CO.	PALO-VERDE 1,2,&3	CE	688	720	498	606	528	612	455	177	
FLORIDA POWER & LIGHT	TURKEY POINT 3&4	WEST	738	434	730	940	322	360	468	192	
UNION ELECTRIC	CALLAWAY	WEST	27	283	442	21	336	224	*	194	Based on 1993
TVA	SEQUOYAH 1&2	WEST	678	658	1678	698	465	372	346	197	Data;1994 Data
BALTIMORE GAS & ELECTRIC	CALVERT CLIFFS 1&2	CE	292	346	304	132	330	407	458	199	not available
ROCHESTER GAS & ELECTRIC	GINNA	WEST	295	605	347	328	261	193	148	201	
FLORIDA POWER & LIGHT	ST. LUCIE 1&2	CE	612	496	778	480	244	461	504	202	
PACIFIC GAS & ELECTRIC	DIABLO CAN YON 1&2	WEST	878	466	324	546	426	260	*	205	Based on 1993
DUKE POWER COMPANY	MCGUIRE 1&2	WEST	1104	620	728	362	386	463	385	206	Data; 1994 Data
SOUTHERN CALIFORNIA EDISON CO.	SAN ONOFRE 2&3	CE	780	567	885	411	330	882	40	209	not available
CONSUMERS POWER	PALISADES	CE	730	314	766	211	392	288	61	214	
SOUTH CAROLINA ELECTRIC & GAS CO.	VC SUMMER	WEST	511	52	376	291	26	276	347	216	
VIRGINIA POWER	SURRY 1&2	WEST	1542	836	576	510	588	387	378	225	

UTILITY	PLANT	NSS	COLLECTIVE RADIATION EXPOSURE PER SITE (Person-REM or Person cSv)							THREE YEAR ROLLING AVERAGE PER UNIT	COMMENTS
			1988	1989	1990	1991	1992	1993	1994		
SOUTHERN NUCLEAR OPERATING CO.	FARLEY-1&2	WEST	552	750	458	648	804	333	251	231	
ENTERGY OPERATIONS, INC.	ARKANSAS 1&2	B&W	1388	712	762	352	846	210	*	235	Based on 1993
FLORIDA POWER CORPORATION	CRYSTAL RIVER 3	B&W	64	234	476	116	425	69	227	240	Data; 1994 Data
CAROLINA POWER & LIGHT	ROBINSON 2	WEST	564	195	437	193	352	337	63	251	not available
CONSOLIDATED EDISON OF NY	INDIAN POINT 2	WEST	235	1436	608	1468	82	675	48	268	
VIRGINIA POWER	NORTH ANNA 1&2	WEST	112	1472	590	630	590	908	192	282	
NORTHEAST NUCLEAR ENERGY CO.	MILLSTONE 2&3	CE/WES	804	1080	594	382	1094	516	196	301	
MAINE YANKEE ATOMIC POWER	MAINE YANKEE	CE	725	99	682	105	466	377	84	309	
COMMONWEALTH EDISON	ZION 1&2	WEST	1260	624	696	174	1042	637	308	331	
CONNECTICUT YANKEE ATOMIC	HADDAM NECK	WEST	237	596	421	590	206	425	*	407	Based on 1993 data; 1994 Data not available

3.4 Biological Environment of Project Area

3.4.1 Vegetation

The proposed construction area to the west of the existing power plant complex and east of the substation currently has a graveled parking area, concrete slabs and a small area of sodded lawn.

3.4.2 Wildlife

The construction area for the steam generator replacement project is used by species of fauna typical to inhabit the Kewaunee Nuclear Power Plant area. These species may include white-tailed deer, mice, voles, song birds, cottontail rabbit, skunk, ground squirrels, and red tailed hawks.

3.4.3 Endangered Resources

The National Heritage Inventory contains no rare or endangered species for the Kewaunee Nuclear Power Plant site.

3.5 Socioeconomics of Project Area

3.5.1 Regional Socioeconomic Environment

Kewaunee County, in which the project is located, and the adjacent counties of Manitowoc, Brown, and Door are predominantly rural with agricultural pursuits accounting for a majority of the land uses. Dairy products and livestock raising are the primary agri-businesses.

Brown County, west of Kewaunee County and Outagamie County to the southwest are centers of a large paper making industry on the Fox River. Heavy manufacturing is found in Manitowoc, Two Rivers, Sheboygan, and Kohler.

The total Kewaunee Nuclear Power Plant shared tax revenue payments to the Town of Carlton and Kewaunee County in 1995 was approximately $570,000.

3.5.2 Site Access

Access to the Kewaunee Nuclear Power Plant site is provided by two facility roads, one each on the north and south sides of the substation/switchyard. Both facility roads intersect Highway 42, approximately seven miles south of the city of Kewaunee.

Public access to the site is permitted via the north plant access road. A parking area for fishermen is provided.

3.5.3 Adjacent Land Use (including nearest residences)

Approximately 906 acres are associated with the Kewaunee Nuclear Power Plant and controlled by Wisconsin Public Service. A comprehensive Land Management Plan has been developed and implemented for the Kewaunee Nuclear Power Plant lands. The Plan includes provisions for plant operation and maintenance, farming, public recreation, forest management, prairie management, wetlands restrictions, and public education.

The nearest adjacent non-power plant owned land is over one half-mile to the west of the proposed construction area for the steam generator replacement project. This land is used for livestock grazing and crop farming.

Figure 2 illustrates the location of adjacent residences in relation to the proposed construction area for the steam generator replacement project.

3.5.4 Traffic

The Kewaunee Nuclear Power Plant is an active generating station. Vehicular traffic is commensurate with the number of employees and routine activities on-site. Traffic increases both on-site access roads and Highway 42 during shift changes and immediately prior to and after normal working hours. Highway 42 has an access lane for north bound traffic to minimize delays to normal traffic flow. Between 1990 and 1992, the annual average traffic on Highway 42 at a point north of Two Rivers was 3,790 vehicles per day.

3.5.5 Noise

Based on the remoteness of the construction area within the low population zone and the limited amount and types of construction equipment required, the noise resulting from the steam generator replacement will be attenuated such that the expected impacts in the local area outside the site boundaries will be negligible.

3.5.6 Aesthetics

The Kewaunee Nuclear Power Plant is located on the western shore of Lake Michigan. The existing site structures are visible both from traffic on Highway 42 and watercraft traffic on Lake Michigan.

When viewed from Highway 42, the containment structure and adjacent auxiliary building are the most visible feature with the electric substation in the foreground. When viewed from Lake Michigan, the existing office and turbine buildings are the most visible feature, with the upper elevations of the containment structure appearing in the background.

Since the area immediately surrounding the existing structures is relatively flat and without trees, the structures provide a landmark in the area.

3.5.7 Cultural Resources

There are no known cultural resource sites on the proposed construction area. The area was previously significantly disturbed during construction of the Kewaunee Nuclear Power Plant. Pre-power plant construction investigations found no cultural resource sites.

4.0 Anticipated Changes to the Environment Resnlting from the Proposed Action

4.1 Physical Effects

The Mock-up\Fab Shop, and Warehouse Building extension will be located outside the protected area, between the main plant complex and the plant substation, as shown in Figure 1.

The Steam Generator Interim Storage Building, as shown in Figure 1, will be located inside the plant protected area between the main plant complex and the Site Training Facility on land that was disturbed during original plant construction.

4.1.1 Construction Air Quality Impacts

Site preparation, construction, and restoration activities will require the use of construction equipment. The construction equipment will be maintained to minimize the potential for adverse effects due to exhaust emissions. The larger work force required for the construction activities will also result in increased vehicular traffic and exhaust emissions on site.

Dust will be created during site grading and by movement of vehicles on the unpaved construction areas. The primary means of dust control, if needed, will be periodic sprinkling of the unpaved areas with water. Parking lot areas are currently covered with stone, gravel, or pavement which will minimize dust generation. Any areas disturbed during the construction of the temporary facilities will remain in this condition for a short period of time until the foundations are completed. Dust is not

expected to be a problem, and any impact will be confined to the immediate areas where the site surface is disturbed.

There will be no open burning associated with the steam generator replacement project.

The outage for the steam generator replacement project will be approximately 42 days longer than a typical refueling outage. The generation of replacement power during this 42 day extended outage period will result in the emission of air pollutants. It is anticipated that replacement generation will be provided by existing coal and gas units, and economy purchases. The generation of replacement power during the replacement outage will not impact our ability to comply with Wisconsin Act 296 or the Clean Air Act Amendment of 1990.

4.1.2 Operational Air Quality Impacts

The proposed project will allow for the Kewaunee Nuclear Power Plant to continue nominal full power operations until the license expiration date of December 21, 2013. As a result, air emissions will be avoided that would result by the generation of electricity from replacement sources. Estimates of the avoided emissions are shown in Table 5.2. This table reflects the avoided emissions for only Wisconsin Public Service Corporation. This table will be updated with the avoided emissions from each of the owners in the future.

4.1.3 Hydrology (quality and quantity)

Dewatering of the proposed construction area site for the steam generator replacement project will not be required.

The steam generator replacement project will not require the intake or discharge of water from Lake Michigan in excess of that used during normal plant operations. The steam generator replacement project construction activities will occur when the generating unit is shut down. During this time the volume of heated water discharged to Lake Michigan will be the same as that for any other refueling shutdown.

The additional 42 days of unit shutdown required to complete the steam generator replacement project activities will result in a commensurate decrease in the amount of heated water discharged to Lake Michigan for this time period. Adverse environmental impacts on aquatic populations are not expected as a result of the extended unit shutdown. The aquatic populations have in the past been routinely subjected to a decreased thermal discharge to Lake Michigan during each refueling outage.

Following the replacement activities, the Kewaunee Nuclear Power Plant will operate with a similar cooling water flow rate and temperature rise. No additional intake or discharge of water, from or to Lake Michigan, will take place. As a result, there will be no change in the thermal discharge plume due to replacement of the generators.

The interim steam generator storage building design incorporates a sump to collect any water resulting from internal condensation. This sump will

be monitored and drained as required. No changes to the plant Wisconsin Pollutant Discharge Elimination Systems permit are anticipated.

4.1.4 Floodplain

All project activities will be conducted outside any floodplain areas. The topography of the site is not being altered by the proposed project.

4.1.5 Soils and Erosion

The proposed construction area was graded and leveled during initial plant construction. The total surface area that will be prepared for steam generator replacement project construction activities is less than one acre. The proposed temporary facilities will be constructed with minimal additional excavation.

Drainage from the construction area will be controlled to minimize erosion using the State of Wisconsin, Construction Site Best Management Practices Handbook. Erosion and runoff control measures will include limiting site grading and surface disturbance to the minimum area practicable and covering laydown areas with gravel.

Precipitation runoff from the site will be routed through the existing surface water drainage system and directed to the existing site drainage systems. A vegetation buffer strip will be maintained between the construction area and the shore of Lake Michigan. Sedimentation basins, fencing, and hay bales will be used where determined necessary to control sediment runoff.

Following completion of construction activities, remaining disturbed areas around the structures will be reseeded and will quickly return to grass cover.

4.1.6 Topography

The topography of the project site will not be re-contoured by the project activities. The construction of both the temporary facilities and the interim steam generator storage building will occur at existing elevations.

4.1.7 Radiological

A radiological assessment of the project effects on the site both during and after construction activities is contained in Section 6.0 of this report. This assessment includes the site and off-site radiological effects of the project.

4.1.8 Solid/Hazardous Waste (including asbestos)

The construction activities associated with the proposed project will generate nominal amounts of solid non-radiological waste during the construction of the temporary facilities. Housekeeping operations for all construction areas will be performed throughout the construction period. Construction wastes will be separated into salvageable and non-salvageable materials. Salvageable materials such as lumber and scrap metal will be sold to salvage contractors. Non-salvageable materials will be disposed of by a licensed contractor.

Minimal hazardous wastes are expected to be generated as a result of this project. Non-hazardous waste generating techniques will be used throughout the project for cleaning and preparation of the replacement steam generators. Disposal for these wastes will be performed in accordance with existing facility procedures which follow state and federal guidelines. No changes to existing power plant hazardous waste storage activities should result from the proposed project.

Solid waste impacts will result from the generation of replacement power for the additional 42 days of the Kewaunee Nuclear Power Plant's shutdown that are required to complete the steam generator replacement project activities. Existing disposal facilities and recycling programs will be able to accommodate the additional ash generated.

Estimates of the radioactive wastes generated by the steam generator replacement project construction activities are provided in Section 6.0 of this report.

The steam generator replacement project at the Kewaunee Nuclear Power Plant will preclude the co-owners from generating fly ash associated with replacing the nominal 533 megawatts of nuclear power with coal fired power.

It is possible that some asbestos containing materials may be encountered during the steam generator replacement project. Estimates of the quantity of asbestos requiring removal will be developed when the engineering phase of the project is complete. Samples of the asbestos materials scheduled to be removed will be collected and the level of radioactivity will

be determined. After this assessment is made, a determination will be made for the proper handling and disposal methods.

Materials containing asbestos will not be installed or used during the replacement of the steam generators. The new steam generators will not contain asbestos.

4.1.9 Sanitary Waste

During site preparation and early stages of construction, portable, and existing installed sanitary facilities will be used. All sanitary wastes discharged to existing installed sanitary facilities will be treated and discharged in accordance with the terms and conditions of the existing Wisconsin Pollutant Discharge Elimination Systems permit.

Wastes from portable facilities will be removed by a licensed contractor. A holding tank will be used to collect sanitary waste water from the temporary facilities. Waste from this holding tank will be removed by a licensed contractor.

When project activities are completed, the temporary sanitary facilities will be removed. When the number of site employees decreases to normal staffing level, there will be no resulting additional impacts on sanitary wastes generated at the site.

4.2 Biological Effects

4.2.1 Vegetation

The proposed construction area is comprised primarily of graded and graveled areas. An area of less than one acre that is predominantly covered with grass and shrub vegetation material will be graded and graveled.

Construction project activities will not change the plant operating parameters. Following completion of the steam generator replacement project, the temporary facilities will be removed and the native vegetation will be reseeded to assist the return to its present state.

4.2.2 Wildlife

It is anticipated that wildlife species typical to disturbed grass and shrub vegetated sites will move to and use adjacent areas of the plant site once construction activities begin. Other existing populations of wildlife on the plant site will avoid the area until construction activities are completed.

Construction project activities will not change the plant operating parameters. When the steam generator replacement project activities are completed and the temporary facilities are removed, the existing wildlife species are expected to re-inhabit the reclaimed areas as prior to the steam generator replacement project activities. Wildlife habitat associated with newly constructed facilities remaining after construction will no longer be available.

4.2.3 Endangered Resources

The National Heritage Inventory has identified no rare or endangered species on the Kewaunee Nuclear Power Plant site.

4.3 Socioeconomic Effects

Refer to Section 4.5 of the Application for an economic analysis of the proposed steam generator replacement project.

4.3.1 Land Use

The siting of the proposed temporary facilities to support the steam generator replacement project construction is identified on Figure 1. The total site area north of the plant which will be disturbed by the steam generator replacement project is less than four acres.

The steam generator replacement project should have no impact on the existing geography or natural features of the Kewaunee Nuclear Power Plant site. The site area proposed for the temporary facilities to support the steam generator replacement project construction has been disturbed by initial plant construction or subsequent construction activities. Proposed buildings will be constructed on or above existing grades with minimal additional excavation. The construction of the temporary facilities will not result in the permanent conversion of land to industrial use.

With the exception of the Interim Steam Generator Storage Facility and its immediate surroundings, the land used during the steam generator

replacement project construction activities will be returned to its current condition directly following the steam generator replacement project.

4.3.2 Employment

The steam generator replacement project construction labor force will peak near 300 persons in October of 1999. It is anticipated over 80 percent of the labor will be hired locally. It is also anticipated that most of the building materials, supplies, and fixtures required for construction of the proposed temporary facilities will be purchased locally. Thus, the project will provide employment, income, and sales revenue to the local region.

Approximately 35 construction management and specialized construction personnel will relocate to the local area on a temporary basis for periods of time varying from a few days to a several months. The local region has adequate motel and temporary lodging facilities to assimilate this influx of workers. Revenue from room rental, meal expenditures, and other personal purchases will benefit the local region. No disruption of normal usage of facilities in the local region is anticipated.

When construction activities are completed, plant employment will return to normal staffing levels.

4.3.3 Traffic

There will be increased traffic along U.S. Highway 42 created by the arrival and departure of a maximum of 300 workers per shift. This construction work force is similar in size to the work force required for replacing the steam generators at Point Beach Unit 1 in 1983, which

required no special traffic controls. The need for special traffic controls at the Kewaunee Nuclear Power Plant during the steam generator replacement outage is not anticipated.

Access for all construction materials for the site will be from Highway 42 via the existing access roads. Motorists using Highway 42 may experience delays due to increased automobile traffic and delivery of construction materials to the site. Wisconsin Public Service will consult with local highway officials regarding the need for warning signs and traffic controls or flagmen in appropriate situations.

The replacement steam generators will be transported to the City of Kewaunee by railroad. The generators will be off-loaded to a commercial transporter for delivery to the site via Highway 42. The commercial transporter will be similar to that used for transport of the original steam generators from the Kewaunee harbor to the Kewaunee Nuclear Power Plant site in November of 1970. Appropriate local and state transportation agencies will be consulted prior to transportation to determine the detailed route and the specific traffic controls and other necessary requirements. The existing highway and local road and street network of the area provides alternate routes to be taken during major haul periods.

When construction activities are completed, vehicular traffic will return to normal operating levels.

4.3.4 Noise

The primary source of noise during construction activities will be from the internal combustion engines used to power the construction equipment.

The construction activities will not require the use of explosives. The noise impact depends on a number of factors including the type of equipment used, the amount of equipment operating at one time, and the distance to receptors.

Since these factors vary over the term of the construction activities, the quantification of impacts is difficult. Standard noise control methods will be implemented during construction. These noise control methods typically mitigate the noise generated to an average of 75 DBA at a distance of 50 feet. The following table presents typical noise levels generated by construction equipment at various reference distances.

Typical Noise Levels Produced by Construction Equipment for Various Distances from the Shore

Distance (feet)	Noise Level (DBA)
25	81
50	75
100	69
150	65
200	63
250	61
300	59
400	57

The nearest residence to the construction site is located approximately 3,900 feet north of the facility. Noise levels of 65 Db or less during daytime hours are generally considered acceptable levels under HUD guidelines.

OSHA noise standards will be followed to protect personnel located on-site. Noise impacts are expected to be confined to the construction area. The remoteness of the site will serve to attenuate the noise level in the local area outside of the site boundary.

The project activities will have no impact on the levels of noise experienced beyond the plant property boundaries when the construction project is completed. The operating parameters of the Kewaunee Nuclear Power Plant are not being changed by the proposed project.

4.3.5 Aesthetics

The proposed siting of temporary construction buildings has been selected to minimize adverse visual effects to the public, reducing the overall aesthetic impact of the steam generator replacement project construction activities. The proposed temporary facilities will not be readily discernable from existing plant structures and will not obstruct the shoreline.

The temporary facilities will be removed when the steam generator replacement project construction activities are completed. The interim steam generator storage facility will not be as tall as existing structures and will be designed to blend with the surrounding environment and existing architecture. The visual impact will not be significantly different than the existing conditions.

4.3.6 Cultural Resources

Steam generator replacement project construction activities will take place on an area that supports no known archeological or historical sites.

4.4 Consumption of Resources

Site preparation and construction activities will require reasonable amounts of steel, concrete, stone, and other typical construction materials. Material resources will be limited to amounts necessary to accomplish the project. Until detailed designs for the support facilities are complete, the quantities of specific construction materials to be used cannot be accurately calculated.

Some of the material resources will be irreversibly committed to the project. Other resources, however, will have a reclaimable value when the Kewaunee Nuclear Power Plant is retired. At that time, Wisconsin Public Service will recycle as many resources as is feasible.

The Kewaunee Nuclear Power Plant site is currently under industrial usage. The construction of temporary facilities will not result in the permanent conversion of land to industrial use.

Any currently grassed or vegetated lands used for equipment laydown areas will be seeded and allowed to return to a vegetated state following completion of the project.

The steam generator replacement project will not affect the operating parameters of the facility. When activities are completed, the consumption of resources will return to existing normal operational levels.

5.0 Enviroumental and Economic Evaluation of Steam Generator Replacement Alternatives

WPSC has used the extensive experience of the nuclear industry in the development of alternatives. Many alternatives such as reducing operating temperature to reduce corrosion rates were assessed but are not described in the application because of the low likelihood of being of benefit. The following alternatives plus sensitivities best represent the reasonable alternatives to replacement of the steam generators in 1999 for addressing the tube degradation occurring in the KNPP steam generators.

1) An unplanned shutdown of KNPP in the year 1998. This case is the bounding case for potentially unknown, undetected, or rapidly growing tube degradation.

2) A planned shutdown of KNPP in the year 2002 assumes NRC approval of the HEJ pressure boundary relocation with a more conservative pressure boundary value than requested by WPSC, which results in a lower sleeved tube recovery rate. The NRC approval is assumed contingent on a planned mid-cycle shutdown in 1997, for inspection of the sleeved tubes.

3) Repair of the degraded steam generator tubes in an effort to maintain generating capacity as long as possible. Under this alternative the 30% effective tube plugging limit is exceeded in the year 2007. Should additional analyses determine the unit can safely operate at a 35% plugging limit, the effective tube plugging limit would be exceeded in the year 2008.

Refer to Section 4.0, "Description of Alternatives" in the Application for a detailed description of alternatives considered for the steam generator replacement project.

Refer to Section 4.5, "Recommendations" in the Application for a complete discussion of the economic factors relating to the alternatives for steam generator replacement.

Table 5.1 provides a comparison of steam generator options that includes the following information for the alternatives that were considered: Construction Impacts, Amount of Spent Fuel, Cost Difference, Occupational Radiation Exposure, and Additional Low Level Radioactive Waste Generated. Table 5.2 provides a comparison of emissions for the replacement and shutdown options including the emission differences.

Table 5.1

Comparison Of Steam Generator Options

Option	Construction Impacts	Spent Fuel (number of assemblies)	Cost Difference	Occupational Radiation Exposure (person-rem)	Additional Low Level Radioactive Waste Relative to Present Operation
Unplanned Shutdown in 1998	From replacement power plants: dust, noise, erosion, fewer jobs at Kewaunee	A 1998 unplanned shutdown would result in 408 less spent fuel assemblies being generated.	(+) 39.6	210	2,500 cu. ft.
Planned Shutdown in 2002	From replacement power plants: dust, noise, erosion, fewer jobs at Kewaunee	A 2002 planned shutdown would generate 320 less spent fuel assemblies.	Base Case	428	4,200 cu. ft.
Repair		A 2007 unplanned shutdown would generate 144 less spent fuel assemblies.	(-) 21.0	960	9,600 cu. ft.
Replace Steam Generators in 1999 (proposed option)	2 temp. Bldgs I permenent 300 temp. jobs		(-) 40.3	1228	19,780 cu. ft.

TABLE 5.2

Emissions and Differences for Two Kewaunee Options

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1999 Steam Generator Replacement															
SO_2 Emissions (tons)	31781	27376	27810	27681	27155	27253	27390	27673	28271	28581	28657	29295	29993	30412	30342
CO_2 Emissions (tons)	8687317	8041031	8197817	8151020	7995866	8041004	8094362	8154729	8376925	8482152	8529671	8786699	9003651	9188321	9215104
N_2O Emissions (tons)	135	119	123	122	120	122	124	123	130	133	136	145	150	157	161
CH_4 Emissions (tons)	50	41	44	43	43	44	45	44	48	50	52	58	60	64	68
2002 Planned Shutdown															
SO_2 Emissions (tons)	31450	27692	28327	27706	30260	30031	30323	30910	30966	31151	31390	31648	32248	32516	32521
CO_2 Emissions (tons)	8579799	8137603	8360369	8159133	9324381	9255507	9362368	9533834	9605267	9689171	9831455	9958591	10159451	10308911	10431968
N_2O Emissions (tons)	132	121	126	122	174	172	176	178	183	188	196	202	207	214	226
CH_4 Emissions (tons)	49	42	46	43	77	76	78	79	83	85	91	95	97	102	111
Differences between Steam Generator Replacement and 2002 Shutdown															
SO_2 Emissions (tons)	(331)	316	517	25	3105	2778	2933	3237	2695	2570	2733	2353	2255	2104	2179
CO_2 Emissions (tons)	(107,518)	96572	162552	8113	1328515	1214503	1268006	1379105	1228342	1207019	1301784	1171892	1155800	1120590	1216864
N_2O Emissions (tons)	(3)	2	3	0	54	50	52	55	53	55	60	57	57	57	65
CH_4 Emissions (tons)	(1)	1	2	0	34	32	33	35	35	35	39	37	37	38	43

6.0 Radiological Impacts of the Steam Generator Replacement Project and Alternatives

6.1 Public Exposure Estimate

The radiological environmental impact of the steam generator replacement project is evaluated below in terms of off-site dose consequences using methods contained in Nuclear Regulatory Commission Regulatory Guide 1.109 and the Kewaunee Nuclear Power Plant Off-site Dose Calculation Manual. The off-site dose potentially resulting from the planned steam generator replacement project at the Kewaunee Nuclear Power Plant was found to be a very small fraction of the allowable limits.

In order to calculate the potential off-site dose resulting from the Kewaunee Nuclear Power Plant steam generator replacement project, a source term was calculated using radioactive effluent data from refueling outages of known lengths in 1993, 1994, and 1995. These source terms were then averaged and projected to the estimated length of the steam generator replacement project outage. The Kewaunee Nuclear Power Plant's RETSCode computer code was then used to correlate the source term to an estimated off-site dose. This was done for both gaseous and liquid effluents. The results are shown on the next page.

6.1.1 Gaseous Effluent Evaluation

Tahle 6.1.1
Isotopes used in Steam Generator Replacement Project
Gaseous Effluent Dose Estimate

Isotope	*μCi released 1993 outage*	*μCi released 1994 outage*	*μCi released 1995 outage*	*projected μCi released SGRP*
H-3	2.55E+6	1.36E+5	5.44E+7	2.44E+7
Co-58	3.49E+1	3.11E+1	4.95E+0	3.55E+1
Fe-59	-	-	8.36E-3	1.07E-2
Co-60	1.66E+1	1.04E+1	2.89E-1	1.37E+1
Nb-95	-	2.53E+0	-	4.10E+0
Sn-113	-	1.37E-3	-	2.22E-3
Sb-127	-	1.61E-1	-	2.61E-1
I-131	1.36E-2	6.36E-3	1.22E-2	1.51E-2
I-132	1.83E-2	1.24E-2	-	2.31E-2
I-133	-	-	1.84E-3	2.35E-3
Cs-137	1.95E+0	1.44E+0	-	2.57E+0

Notes: Outage related releases were made over a 42 day period in 1993, over a 37 day period in 1994, and over a 47 day period in 1995; isotope quantities are normalized to 60 days for the projected portion associated with the steam generator replacement project.

The maximum off-site dose from airborne effluents is estimated to be 5.89 E-4 millirem compared to a quarterly limit of 7.5 millirem. The pathway for this exposure is inhalation and the organ of interest is the child liver.

6.1.2 Liquid Effluent Evaluation

Table 6.1.2 Calculations				
Isotope	*Curies released in 1993*	*Curies released in 1994*	*Curies released in 1995*	*Average for SGRP (Curies in 60 days)*
H-3	9.581E+00	1.070E+01	2.227E+01	1.982E+01
Na-24			8.900E-05	3.787E-05
Cr-51	7.135E-04	1.444E-03	4.791E-04	1.324E-03
Mn-54	1.465E-07	5.684E-05	1.385E-04	9.036E-05
Fe-55	1.072E-03	4.056E-03	4.348E-03	5.029E-03
Mn-56			1.408E-05	5.991E-06
Co-57	6.598E-07		1.954E-03	8.318E-04
Co-58	8.336E-03	4.182E-03	9.389E-03	1.023E-02
Fe-59	1.821E-04	8.178E-05		1.309E-04
Co-60	9.976E-04	8.502E-04	2.130E-03	1.841E-03
Sr-89	1.808E-04			8.610E-05
Sr-90	1.836E-06			8.743E-07
Nb-95	1.430E-04	3.005E-04	2.461E-04	3.353E-04
Zr-95	1.338E-04	2.548E-04	2.064E-04	2.893E-04
Ag-110m	3.132E-04	4.201E-04	4.932E-04	5.861E-04
Sn-113	6.766E-05	1.109E-04	6.806E-07	9.245E-05
Sn-117m		2.612E-05		1.412E-05
Sb-122	4.183E-05			1.992E-05
Sb-124	5.457E-04	9.411E-06	2.714E-03	1.420E-03
Sb-125	8.159E-04	1.303E-05	4.304E-03	2.227E-03
Xe-133	9.536E-05			4.541E-05
Cs-137	7.614E-06		6.789E-04	2.925E-04
Outage Length (days)	42	37	47	60

Notes: Outage related releases were made over a 42 day period in 1993, over a 37 day period in 1994, and over a 47 day period in 1995; isotope quantities are normalized to 60 days for the projected portion associated with the steam generator replacement project.

The estimated off-site dose from liquid effluent is 6.04E-3 millirem compared to a quarterly limit of 5 millirem. The pathway for this exposure is ingestion and the organ of interest is the adult lower large intestine.

6.1.3 Comparison with Normal Operation

The average annual[1] site boundary child liver dose associated with gaseous effluents from the Kewaunee Nuclear Power Plant is ≤6.14E-4 millirem, the amount attributable to the proposed steam generator replacement project was estimated at 5.89E-4 millirem. With the contribution from the steam generator replacement project, the estimated annual off-site dose from gaseous effluent remains far less than the 15 millirem limit in the Kewaunee Nuclear Power Plant Off-site Dose Calculation Manual.

The average annual[2] dose to the adult gastrointestinal tract associated with liquid effluent from the Kewaunee Nuclear Power Plant is 0.04855 millirem, where the amount attributable to the proposed steam generator replacement project is estimated at 0.00604 millirem, or 12 percent of the average annual dose. This contribution is small compared to the 10 millirem annual dose limit in the Kewaunee Nuclear Power Plant Off-site Dose Calculation Manual.

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1 The average was calculated from 1993, 1994, and 1995 data

2 The average was calculated from 1993, 1994, and 1995 data.

By comparison, every year each of the 819,000 people living within 50 miles of the plant will receive a dose of 300 millirem (NCRP-94,1987) from natural background radiation. That is 6,400 times more radiation exposure than one would expect to receive from the proposed Kewaunee Nuclear Power Plant steam generator replacement project, assuming this entire population resided at the KNPP site boundary for the 60 days replacement period.

6.2 Occupational Exposure Estimate

The estimated occupational exposure for the replacement of the lower and upper steam generator assemblies at the Kewaunee Nuclear Power Plant is approximately 210 person-rem. The significance of this dose is determined by comparing the estimated exposure for the steam generator replacement project to the reported occupational exposure experienced at modern pressurized water reactors. Also, the estimated exposure for the Kewaunee Nuclear Power Plant steam generator replacement project is compared to the lifetime average annual exposure at the Kewaunee Nuclear Power Plant.

Annual occupational radiation exposure information is available for pressurized water reactors operating between 1973 and 1990 (NUREG-0713, Volume 12). The data indicate that the lifetime average annual occupational exposure per pressurized water reactor is about 470 person-rem, with some plants experiencing as high as 1,120 person-rems.

The average annual occupational exposure between 1973 and 1995 at the Kewaunee Nuclear Power Plant is 139.5 person-rem. Even with the addition of 210 person-rem in 1999 for the steam generator replacement project, the lifetime average annual occupational exposure at Kewaunee should decrease to 127.0 person-rem due primarily to proactive ALARA initiatives.

Table 6.2 illustrates the yearly occupational radiation exposure history for the Kewaunee Nuclear Power Plant.

Table 6.2
Occupational Exposure History for the Kewaunee Nuclear Power Plant

YEAR	*DOSE* (person-rem)	*YEAR*	*DOSE (person-rem)*
1973	1.2	1985	176
1974	49.1	1986	176.1
1975	25.3	1987	226.2
1976	256.4	1988	210.2
1977	130.6	1989	239.3
1978	146.2	1990	144.7
1979	113.2	1991	213.2
1980	145.5	1992	114.9
1981	133.7	1993	105.7
1982	95.9	1994	72.7
1983	171.5	1995	109.3
1984	150.8		

6.2.1 Effect of Decontamination Exposure

Decontamination of plant areas, equipment, and primary system piping will be performed during the steam generator replacement project. Work packages will receive ALARA[3] review prior to final approval and implementation.

Current plans are to decontaminate the Reactor Coolant System pipe ends following old steam generator removal. This should reduce the exposure by a factor of approximately ten for the work required to prepare the Reactor Coolant System pipes for welding, to align the replacement steam generators for fit-up, and to perform the welding and nondestructive examination.

6.3 Impact of Solid Waste

The environmental impact of the solid radioactive wastes generated by the Kewaunee Nuclear Power Plant steam generator replacement project can be evaluated by comparison with the solid radioactive waste generated during normal operations. It is estimated that the steam generator replacement project will result in 2,500 cubic feet of solid radioactive waste containing approximately 150 curies. It is typical for the Kewaunee Nuclear Power Plant to generate about 800 cubic feet per year.

The volume of solid waste generated during the steam generator replacement project will be stored on-site until shipment for disposal in a licensed facility. The cost to dispose of this additional waste is estimated at $1.4 million, and is included in the economic analysis of alternatives in Section 4.5 of the Application.

"As low as reasonably achievable" means making every reasonable effort to maintain exposures to radiation as far below the 10 CFR 20 dose limits as is practical, economic, and social factors being taken into account.

6.4 Steam Generator Storage

A final decision concerning the old steam generator upper assemblies will either be decontaminated and disposed of as non-radioactive scrap or refurbished and reused. The lower assemblies will be stored in a shielded building on the site.

Each steam generator is estimated to contain 250 curies of fixed gamma emitting radionuclides at time of shutdown. Table 6.4 illustrates the activity breakdown.

Table 6.4
Radioactivity Contained In
One Steam Generator Lower Assembly

ISOTOPE	CURIES	ISOTOPE	CURIES
Fe-55	120.8	C-14	2.1
Co-58	52.3	Sb-125	1.5
Co-60	44.5	Cr-51	1.5
Nb-95	6.8	Sn-113	0.7
Ag-110m	6.2	Co-57	0.5
Ni-63	6.2	Sb-124	0.3
Zr-95	3.6	Fe-59	0.2
Mn-54	2.8		

The steam generator interim storage facility will be designed to limit the dose rate to less than 10CFR 20.1301. The dose rate will decrease by at least a factor of two during the first two years of storage due to the decay of short-lived radionuclides. Thereafter, the dose rate will decrease by a factor of two every five years as the remaining Co-60 decays.

The dose estimates associated with interim, shielded storage of the old steam generators represent a small fraction of the natural background radiation.

6.5 Steam Generator Drop Accident, Off-site Exposure Consequences

To prevent the release of radioactive material from the steam generators during transport and storage, steel caps will be welded over all openings in the steam generator lower assemblies before they are removed from the containment building. A release of radioactivity could occur if the steam generator is dropped during handling and the pressure boundary is breached.

Steam Generator Drop Accident Assumptions:

1. Steel caps are welded over all openings in the lower units prior to transport.

2. Only one steam generator is dropped.

3. Radioactivity is estimated to be evenly distributed over 51,500 square feet of tube surface area, and 5,500 square feet of the inside surface of the channel heads, divider plate, and pipe ends.

4. Each steam generator is estimated to contain 250 curies of radioactivity.

5. Transport would not occur until after 25 days shutdown.

6. The isotopic makeup of any particulate contamination released would not be significantly different from that seen on waste stream samples analyzed per 10CFR61.55 requirements.

7. Most loose crud in the steam generator would be comprised of sufficiently large particles such that they would not be released from the steam generator or would fall out of the air in the vicinity of the dropped steam generator and not be available for atmospheric transport to and beyond the site boundary.

8. There is no driving force to remove radioactive particles from the dropped steam generator other than the wind.

9. Calculations were performed using the RETSCode computer code consistent with Nuclear Regulatory Commission Regulatory Guide 1.109, and 10CFR50 Appendix I, and the Kewaunee Nuclear Power Plant Off-site Dose Calculation Manual.

Table 6.5
ISOTOPES RELEASED FOLLOWING A STEAM GENERATOR DROP

ISOTOPE	uCi RELEASED	ISOTOPE	uCi RELEASED
Fe-55	4.83E05	C-14	8.00E03
Co-58	2.09E05	Sb-125	6.00E03
Co-60	1.78E05	Cr-51	6.00E03
Nb-95	2.70E04	Sn-113	3.00E03
Ag-110m	2.50E04	Co-57	2.00E03
Ni-63	2.50E04	Sb-124	1.00E03
Zr-95	1.50E04	Fe-59	1.00E03
Mn-54	1.10E04		

The estimated dose at the site boundary from this airborne release is 0.801 millirem compared to a quarterly limit of 7.5 millirem. The pathway for this exposure is ground deposition and the organ of interest is the bone surface of an infant.

6.6 Radiological Analysis of Alternatives to the Proposed Steam Generator Replacement Project

Table 5.1 provides the occupational radiation exposure associated with each of the four scenarios. These numbers are accumulative through the end of the operational life scenario.

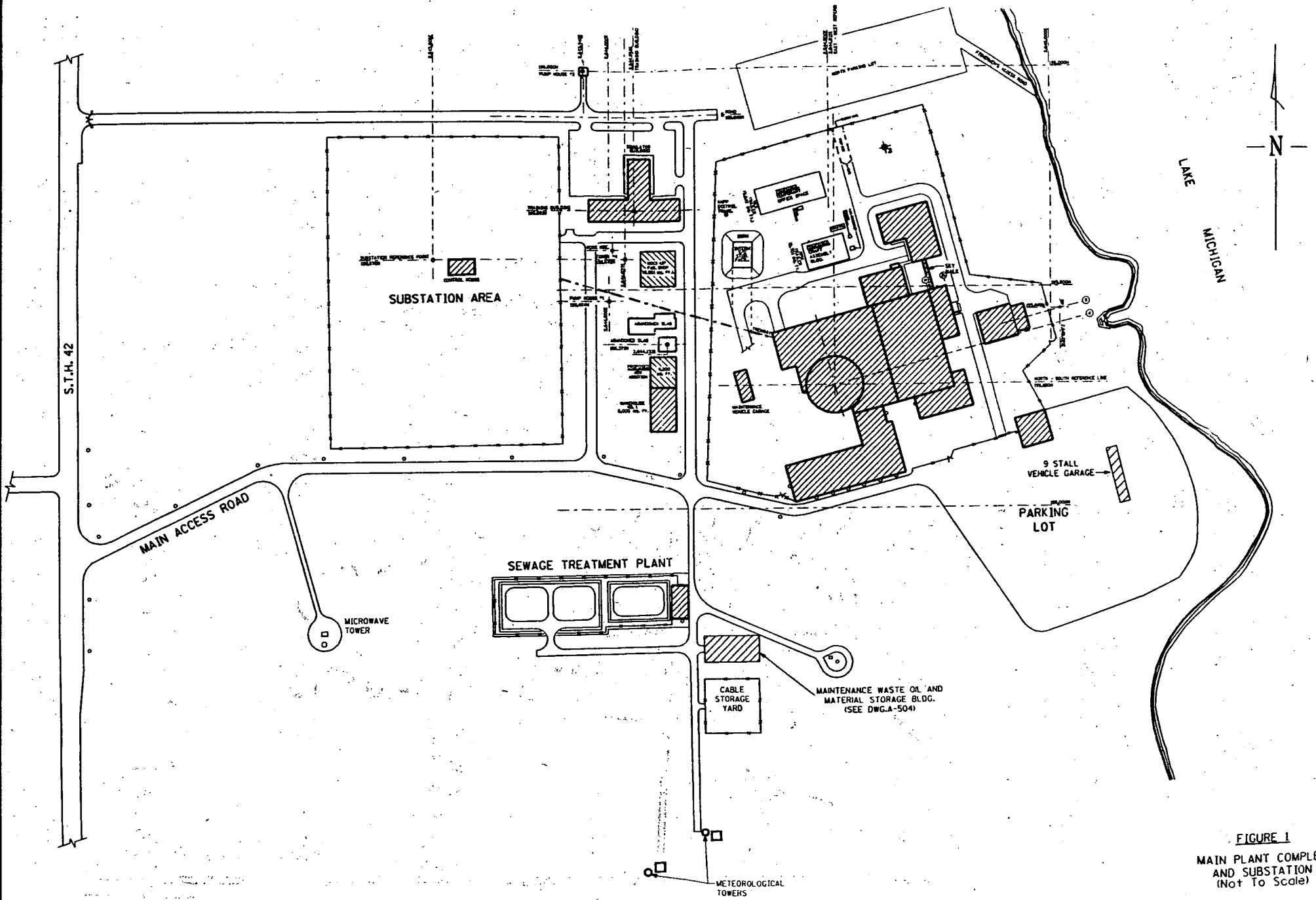

FIGURE 1

MAIN PLANT COMPLEX AND SUBSTATION (Not To Scale)

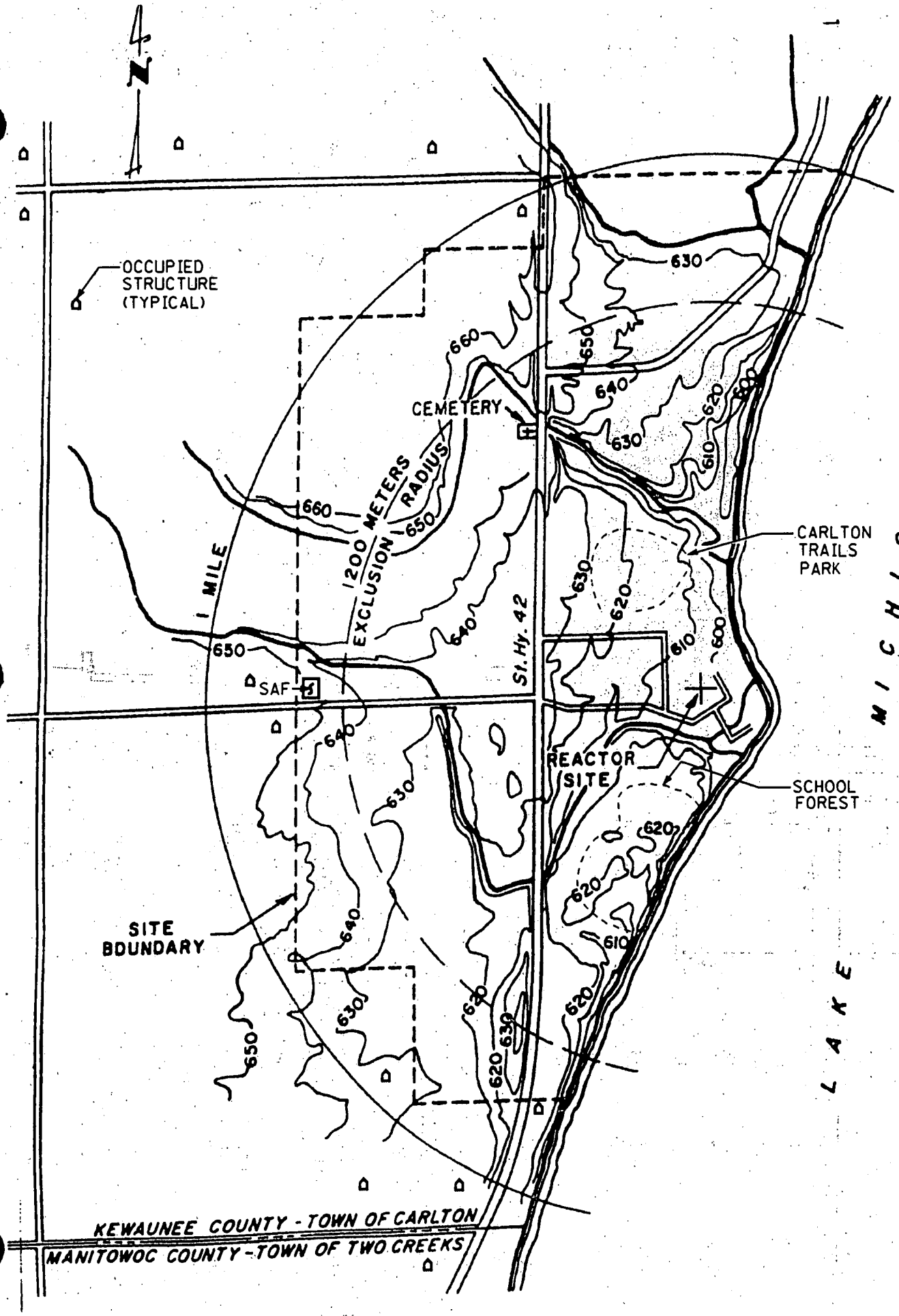

FIGURE 2

SITE LOCATION
(Not To Scale)

Wisconsin Public Service Corporation

Position Paper Regarding

Ownership

WPSC is prepared to take additional ownership of KNPP under terms which provide the existing owners with an economic position comparable to what they would have faced based on an early shutdown in the year 2002, but which allows WPSC to proceed with steam generator replacement and continued plant operation all for the account of WPSC and its customers. This will be accomplished in the following manner. The existing owners will be permitted to replace KNPP energy and capacity in the open market following the date of assumed shutdown (2002). Prior to 2002, WPSC will assure the existing co-owners of an operating cost profile for the KNPP consistent with an early shutdown in 2002. WPSC will commit to the operating cost profile during the transition period upon exercising an option that would be granted by the existing owners to take over the KNPP in 2002. WPSC's decision whether to exercise the option would be made within a reasonable period of time after issuance of the CA, which is the subject of this application. Should WPSC exercise its option, then WPSC is also prepared to provide an option to the existing owners for the transfer of their decommissioning obligations to WPSC in exchange for the transfer to WPSC of their decommissioning funds. As a condition of transfer, these funds would have to be fully funded consistent with existing PSCW rulings on the adequacy of decommissioning funds. The specifics of WPSC's proposal is as follows:

1. In the event steam generator replacement (SGR) has not been approved by the majority of the KNPP operating committee within 60 days following receipt of a SGR CA, WPSC has an option to take ownership of the plant for $0 on December 31, 2002. The option is exercisable within 120 days following the receipt of a SGR CA. WPSC agrees to fund all costs incurred relative to steam generator replacement on its own account.

2. If WPSC exercises its option, then WPSC agrees to accept a decommissioning fund at 12/31/2002 in exchange for the decommissioning obligation. The acceptable decommissioning fund would be fully funded (i.e., funded at a level that will require no further WPSC contributions to cover assumed future decommissioning expenditures based on current assumptions) at the time of transfer based on the existing owner's current ownership interest in the plant. The assumptions used to make this calculation would be

based on the assumptions incorporated into WPSC's current approved PSCW funding plan (i.e., estimated cost in 1992 dollars, cost escalation consistent with PSCW prescribed escalation rates, and fund earnings rates consistent with WPSC assumptions). If it is determined that all or part of the proposed fund transfers will be treated as taxable income to WPSC at the time of receipt, adjustments in the transferred fund will be required to keep WPSC economically whole. If the timing of the transfer of the decommissioning fund has a material impact on the tax consequences, the timing may be adjusted by mutual agreement of the parties. The intent of any shift in the timing of transfer will be to shift the transfer to the date which minimizes the time value of money cost to WPSC of any mismatch between taxable income associated with the receipt of the fund and tax deductions associated with the decommissioning activities. At the time WPSC exercises the option and assumes the decommissioning liability and if the funds are not transferred to WPSC at that time, it shall have the senior and exclusive security interest in the existing owner's total decommissioning funds. In any case, and regardless of the cost of decommissioning, WPSC shall have the right to all of the decommissioning funds. Alternatively, the owners can simply retain their full, pro-rata share of the actual decommissioning costs.

3. Existing owners retain spent fuel obligations for fuel burned, but just through the date of assumed shutdown in 2002, if the option is exercised.

4. WPSC guarantees a cost and performance profile to exiting owners based on an assumed shutdown during 2002 following the exercise of its option. WPSC agrees to fund all costs incurred caused by the steam generator replacement project on its own account. WPSC assumes complete operational control of KNPP following the exercise of its option. The cost profile includes compensation for severance costs, KNPP employee transfer to WPSC costs, and the ramp-down of WPSC A&G costs.

5. If WPSC exercises the option, it takes the rights to all output from the facility following the assumed shutdown date during 2002, and all rights to the site.

6. All transmission rights associated with KNPP terminate after the 2002 assumed shutdown date except as follows: WPSC and MG&E retain full rights under the existing power supply agreement to move megawatts across WP&L's system to each other and WPSC's right to move its share of Columbia and Edgewater generation to the WPSC/WP&L transmission interface. Under the existing power supply agreement, WPSC and MG&E also retain their existing rights, including pricing, to transact with Commonwealth Edison, over the WP&L transmission system.

7. At the time of the exercise of the option, existing owners will assign to WPSC all of their rights to any claims derived from the KNPP, whether from historically, existing, or future conditions, for damages, past or future.

Wisconsin Public Service Corporation

Position Paper Concerning Accelerated Depreciation and Decommissioning Cost Recovery Strategies For tbe Kewaunee Nuclear Power Plant

WPSC seeks an acceleration of nuclear decommissioning and depreciation collections relative to the Kewaunee Nuclear Power Plant (KNPP). The Company asks for a revision to its depreciation schedule and a change in the rate of recovery of decommissioning costs, to be effective with the effective date of the order in the rate case, Docket 6690-UR-110. The requested level of collections in rates will provide for full recovery of the existing plant balances and the development of nuclear decommissioning trust funds adequate to fully fund currently forecasted decommissioning expenditures by the end of the year 2002.

The basis for the request is twofold. Uncertainty regarding the future operating life of KNPP related to the condition of the existing steam generator and the evolution of the electric generation marketplace toward a more competitive model.

Given the current condition of the steam generators at KNPP, it is likely that the facility will not operate to the end of its current operating license, 2013, without replacement of the existing steam generators. Without replacement, the most likely time frame during which the facility will cease to be economic to operate and, therefore, will be shut down, is 2002-2006. There is currently substantial uncertainty that such replacement will in fact be accomplished due to such issues as regulator requirements, industry restructuring, ownership issues, and forecasted economic conditions. And, the shutdown in 2002-2006 timeframe can only be avoided with the extraordinary steam generator project, which requires regulatory approvals that cannot be presumed. Also, even with the regulatory approvals, the project and general economic circumstances will have to be consistent with WPSC undertaking the steam generator project. In light of the substantial uncertainty regarding the future operating life of KNPP, WPSC believes the implementation of an accelerated depreciation and decommissioning recovery pattern is an appropriate regulatory policy.

The expected evolution of the electric generation marketplace to a competitive model also suggests it is appropriate to consider acceleration of nuclear depreciation and decommissioning collections. Current initiatives at both the state (e.g., PSCW Docket 05-EI-114) and federal level (e.g., the

mega NOPR) are pressing for the creation of an open, competitive market for the generation of electricity. One of the substantial issues of concern in this evolution is the potential for "stranded investment" in the existing generation portfolios of existing utilities. The term stranded investment refers to facilities where the expected value of future output capability is not expected to be adequate to fund future operating and capital costs, as well as return of and on the existing unrecovered investment in the facility. Included in existing unrecovered investment are any future decommissioning expenditures associated with the facility which are not avoidable by early shutdown. The fact that a facility has some stranded investment associated with it does not necessarily suggest that it is uneconomic to operate on a going forward basis. This is because costs relevant to the determination of continued operation are those which are avoidable by a decision to cease operation. Existing unrecovered investment and unavoidable future decommissioning costs (sometimes referred to as sunk costs) are not affected by a decision to cease operation and are, therefore, not relevant to the determination of whether to continue operation. It is very likely that many facilities which have stranded investment potential will be economic on a going forward basis and will continue to operate in a competitive generation marketplace.

Our proposal to accelerate nuclear depreciation and decommissioning is one mechanism for proactively managing the stranded investment and intergenerational equity issue relative to KNPP during the evolution toward a competitive generation marketplace. Costs related to the steam generator replacement project are going forward costs necessary to achieve continued operations to the end of the facility's licensed lifetime, and those costs are competitive given the cost of current alternative power supplies. WPSC urges that the to-be incurred steam generator project costs be amortized in the future, and included as costs to be assigned the plant output in the future, competitive marketplace. However, the return of and on the sunk costs associated with the existing facility and the already implicated costs of decommissioning which cannot be avoided by a shutdown, should be accomplished as much prior to the steam generator replacement cost recovery as possible so as to achieve near team marginal avoidable, costs as soon as practical.

Accelerating the recovery of sunk costs would clarify the real cost status of the facility as we evolve to the more competitive generation marketplace.

Further, bifurcating the accelerated recovery issue from the going forward investment decision clarifies that they really are distinct regulatory issues and should be considered as such. Obviously a determination that early shutdown is the most economic alternative would support acceleration of depreciation and decommissioning collections, but making such a determination a necessary condition for accelerated recovery could distort the going forward decision making process. The process could be distorted by linking a potentially attractive regulatory outcome, the accelerated recovery, to a going forward decision, steam generator replacement, which should not at all be dependent on the treatment of sunk costs (and would not be in a nonregulated marketplace). If a party felt accelerated recovery was an attractive option that was only achievable by early shutdown, it could inappropriately bias its decision making process in favor of an early shutdown to achieve the desired outcome on accelerated recovery. This type of potential bias should be avoided in order to assure that all going forward options are evaluated on a level playing field so as to provide the best chance that the least cost option for the state can be identified accurately and accomplished.

With respect to depreciation, WPSC requests a special depreciation accrual in the amount of $6,788,000 for the years 1997-2002 (6 years). This level of special accrual combined with existing projected depreciation accruals will provide for the full recovery of existing unrecovered plant balances and all forecasted capital expenditures except the steam generator by the end of the year 2002. Attached as Exhibit 1 is a schedule detailing the computation of this special accrual.

With respect to decommissioning, WPSC requests an increase in the retail nonqualified fund contribution of $8,853,000, from $1,277,000 to $10,130,000. No change is requested in the retail qualified fund contribution currently set at $7,142,000. The reason that no change is requested in the qualified (tax deductible) contribution level is because under IRC Sec. 468A of the federal tax law the maximum qualified contribution is based on lesser of the amount included

in cost of service or the level funding amount. The level funding amount is based upon amortizing the anticipated decommissioning costs allowed under IRC Sec. 468A over the period any portion of the nuclear facility will be included in rate base for ratemaking purposes. Absent a firm plan to shut the facility down prior to the end of its existing operating license, the level funding amount will continue to be calculated based on the methodology used in the determination of the currently approved qualified funding plan. Therefore, we do not believe we can increase the qualified funding level and must concentrate the funding increase to the nonqualified trust. The impact on customers from a discounted present value of revenue requirements perspective of this change will be to increase the present value of revenue requirements by $19,549,000, from $72,231,000 to $91,780,000. To understand the underlying cause of this increase, we also developed a funding plan assuming no limitation in the qualified funding level based on the level funding limitation. This funding plan had discounted revenue requirements totaling $81,518,000. This plan illustrates that of the $19,549,000 increase in discounted revenue requirements from a funding plan using the current approved funding period to our requested funding plan, $9,287,000 relates to the acceleration of funding alone and $10,262,000 relates to the loss of tax benefits associated with the requested funding plan (i.e., because of the level funding limitation). Attached as Exhibit 2 is a schedule summarizing these results and the detailed funding plan for each of the analyses described above.

Exhibit 1

Schedule Detailing the Computation

of the

Special Accrual

Wisconsin Public Sevice Corporation
Calculation of Special Depreciation Accrual
ed to Fully Recover KNPP Investment
December 31, 2002

02/14/96

Depreciable Plant at 12/31/2002 (Includes Forecasted Additions w/o New SG)	141,943,187
Reserve Balance at 12/31/2002 with Existing Depreciation Rates	(101,216,639)
Unrecovered at 12/31/2002	40,726,548
Annual Special Accrual from 1997-2002	6,787,758

Exhibit 2

Sehedules Summarizing Results

of the

Detailed Funding Plans

02/14/96

Wisconsin Public Sevice Corporation
Summary of Retail Accelerated Decommissioning
Funding Analyses

	Current Plan	Current Plan Starting with 12/31/95 Fund Balances	Accelerated Funding w/o Tax Restrict	Accelerated Funding with Tax Restrict
Annual Payment to Qualified Trust Starting 1997	7,142,000	7,082,000	15,162,000	7,142,000
Annual Payment to Nonqualified Trust Starting 1997	1,277,000	814,000	1,663,000	10,130,000
Total	8,419,000	7,896,000	16,825,000	17,272,000
Discounted Customer Revenue Requirements	N/A	72,231,000	81,518,000	91,780,000

Schednle A

Cnrrent Plan

with

Deeember 31, 1995 Balauce

DECOMMISSIONING ANALYSIS FOR 1992 PSCW DEPRECIATION STUDY

02/14/96

ASSUMPTIONS

STARTING YEAR FOR ANALYSIS	1996	****						TOTAL PORT SPLIT		QUAL PORT SPLIT		
LAST PAYMENT TO FUND (END OF YEAR)	2013	****										
REMAINING NUMBER OF PAYMENTS	18		FED TAX RATE (ON INVEST RETURNS)	35.0000%	****			% OF TOTAL POR EQUITIES	% OF TOTAL POR FIXED INC	% OF QUAL POR EQUITIES	% OF QUAL POR FIXED INC	% OF QUAL FIX IN POR TAX FIX IN	% OF QUAL FIX IN POR TE FIX INC
FIRST PAYMENT FOR DECOMMISSION (END OF YEAR)	2008		STATE STATUTORY TAX RATE (ON INVEST RETURNS)	7.0000%	****			****				****	
YEAR LICENSE EXPIRES	2013		STATE EFFECTIVE TAX RATE	5.1350%			1996	45.00%	55.00%	9.83%	90.17%	100.00%	0.00%
YEARS TO END OF LICENSE	18						1997	45.00%	55.00%	12.58%	87.42%	100.00%	0.00%
NO. OF YEARS FROM 1/1/74 - 12/31/08	35	****	FEDERAL DIVIDEND EXCLUSION (CORP)	70.00%	****		1998	45.00%	55.00%	14.75%	85.25%	190.00%	0.00%
NO. OF YEARS FROM 1/1/84 - 12/31/08	25.0	****	STATE DIVIDEND EXCLUSION (CORP)	0.00%	****		1998	45.00%	55.00%	16.39%	83.61%	100.00%	0.00%
% OF COST ELIGIBLE FOR TAX QUALIFIED FUND	71.4286%						2000	45.00%	55.00%	17.66%	82.34%	100.00%	0.00%
FUTURE COST OF DECOMMISSIONING	703,581		QUALIFIED FUND				2001	45.00%	55.00%	16.67%	61.33%	100.00%	0.00%
FUTURE COST ELIGIBLE FOR TAX QUALIFIED FUND	502,558		EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****		2002	45.00%	55.00%	19.48%	80.52%	100.00%	0.00%
FUTURE COST NOT ELIG FOR TAX QUALIFIED FUND	201,023		EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****		2008	45.00%	55.00%	20.13%	79.87%	100.00%	0.00%
			EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%			2004	45.00%	55.00%	20.66%	79.34%	100.00%	0.00%
PRIOR PAYMENTS TO QUAL FUND	45,054	****	EXPECTED ANNUAL CAPITAL GAIN REALIZATION %	30.00%	****		2000	45.00%	55.00%	21.09%	78.91%	100.00%	0.00%
PRIOR INVEST EARN IN QUAL FUND	0	****	(% APPLIED TO CURRENT YEAR AND BEGINNING				2008	45.00%	55.00%	21.45%	78.55%	100.00%	0.00%
BEGINNING BALANCE IN TAX QUALIFIED FUND	45,054		OF YEAR CUMMULATIVE UNREALIZED GAIN)				2007	45.00%	55.00%	21.74%	78.26%	100.00%	0.00%
							2008	40.00%	80.00%	14.87%	85.13%	100.00%	0.00%
TOTAL BEGIN BALANCE IN NON TAX QUAL FUND	31,919	****	NONQUALIFIED FUND				2008	35.00%	55.00%	7.00%	92.10%	190.00%	0.00%
			EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****		2010	30.00%	70.00%	0.84%	99.16%	100.00%	0.00%
			EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****		2011	25.00%	75.00%	0.00%	100.00%	100.00%	0.00%
CALCULATIONS			EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%			2012	20.00%	80.00%	0.00%	100.00%	100.00%	0.00%
			EXPECTED ANNUAL CAPITAL GAIN REALIZATION %	30.00%	****		2013	15.00%	85.00%	0.00%	100.00%	100.00%	0.00%
ORDER OF DECOMM EXPENDITURES - (1=QUAL FIRST,			(% APPLIED TO CURRENT YEAR AND BEGINNING				2014	10.00%	90.00%	0.00%	100.00%	100.00%	0.00%
2=NONQUAL FIRST, 3=PRORATA)	3.00	3.00 ****	OF YEAR CUMMULATIVE UNREALIZED GAIN)				2015	5.00%	95.00%	0.00%	100.00%	100.00%	0.00%
EQUIT HELD - (1=Q 1st, 2=NQ 1st)	2.90	2.00 ****					2016	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
NONQUAL TAXES WITHDRAWN							2017	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
FROM FUND (1=YES, 2=NG)	1.00	1.00 ****	EXPECTED TAXABLE FIXED INCOME RETURN	7.20%	****		2018	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
ANNUAL PAYMENT - QUALIFIED FUND		7,082	EXPECTED FEDERAL TAX EXEMPT FIXED INCOME RET	5.40%	****		2019	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
ANNUAL PAY - NON QUALIFIED FUND		614					2020	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
			EXPECTED ADMIN EXPENSE	0.4000%	****		2021	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2022	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
0 QUAL							2020	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
(0) NQUAL							2024	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
72,231 DISPVRR							2025	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
8,301 1ST YEAR RR			BEGINNING BAL QUAL EQUITIES	11,834	****		2026	0.00%	100.00%	0.00%	190.00%	100.00%	0.00%
			BEGINNING BAL QUAL FIXED INCOME	33,220	****		2027	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
			TOTAL BEGINNING BALANCE QUAL FUND	45,054			2028	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2029	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
			BEGINNING BAL QUAL FUND UNREALIZED GAINS	1,695	****		2030	0.00%	100.00%	0.00%	100.00%	190.00%	0.00%
							2031	0.00%	100.00%	0.00%	100.00%	190.00%	0.00%
			BEGINNING BAL NONQUAL EQUITIES	31,919	****		2032	0.00%	190.00%	0.00%	100.00%	100.00%	0.00%
			BEGINNING BAL NONQUAL FIXED INCOME	0	****		2033	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
			TOTAL BEGINNING BALANCE NONQUAL FUND	31,919			2034	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2035	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
			BEGINNING BAL NONQUAL FUND UNREALIZED GAINS	7,876	****		2036	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2037	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2033	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2030	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2040	0.00%	100.00%	0.00%	100.00%	190.00%	0.00%
							2041	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2042	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2043	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2044	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2045	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2040	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2047	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2045	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
							2049	0.00%	190.00%	0.00%	100.00%	100.00%	0.00%
							2050	0.00%	100.00%	90.97%	0.03%	100.00%	0.00%
							2051	0.00%	100.00%	100.00%	-0.66%	190.00%	0.00%
							2032	0.00%	190.00%	100.00%	0.00%	100.00%	0.00%
							2033	0.00%	100.00%	90.83%	0.17%	100.00%	0.00%
							2054	0.00%	100.00%	99.66%	0.40%	100.00%	0.00%
							2055	0.00%	190.00%	99.33%	0.87%	100.00%	0.00%
							2050	0.00%	100.00%	99.03%	0.97%	100.00%	0.00%
							2057	0.00%	100.00%	98.72%	1.28%	100.00%	0.00%
							2058	0.00%	100.00%	98.39%	1.61%	190.00%	0.00%
							2059	0.00%	100.00%	98.00%	1.94%	100.00%	0.00%
							2000	0.00%	100.00%	97.73%	2.27%	100.00%	0.00%

**** - Indicates this is an inputted assumption.

^^^^ - Indicates this is input coming in through a file link.

NONQUAL PORT

DECOMMISSIONING EXPENDITURE

% OF NQUAL PORT EQUITIES	% OF NQUAL PORT FIXED INC	% OF NQUAL FIX IN PORT TAX FIX INC ****	% OF NQUAL FIX IN PORT TE FIX INC	QUAL FED TAX RATE ****	QUAL STATE STAT TAX RATE ****	YEAR	AMOUNT ****	FROM QUALIFIED	TOTAL FROM NON QUAL
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	1996	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	1997	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	1998	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	1998	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2008	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2001	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2002	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2003	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2004	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2005	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2008	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2007	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2008	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2008	97	69	28
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2010	102	73	29
84.87%	15.13%	0.00%	100.00%	20.00%	7.90%	2011	109	78	31
68.30%	31.70%	0.00%	100.00%	20.00%	7.00%	2012	115	82	33
51.65%	48.35%	0.00%	100.00%	20.00%	7.90%	2013	822	587	235
34.37%	65.63%	0.00%	100.00%	20.00%	7.90%	2014	27,127	19,376	7,750
17.22%	82.78%	0.00%	100.00%	20.00%	7.90%	2015	30,158	21,541	8,616
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2018	49,202	35,144	14,058
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2017	108,633	76,166	30,466
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2018	112,098	80,070	32,028
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2019	102,680	73,343	29,337
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2020	35,870	25,479	10,191
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2021	9,601	6,858	2,743
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2022	3,210	2,293	917
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2025	3,385	2,416	967
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2024	3,570	2,550	1,020
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2025	3,767	2,691	1,076
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2026	3,975	2,839	1,136
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2027	4,198	2,997	1,199
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2028	4,431	3,165	1,266
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2026	4,681	3,343	1,337
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2033	4,946	3,533	1,413
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2031	5,228	3,734	1,494
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2032	5,527	3,948	1,579
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2033	5,846	4,175	1,670
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2034	6,184	4,417	1,767
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2033	6,545	4,875	1,870
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2033	6,928	4,948	1,979
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2037	7,336	5,240	2,096
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2038	7,771	5,551	2,220
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2059	8,235	5,882	2,353
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2040	6,728	6,234	2,494
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2041	9,255	6,611	2,644
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2042	9,816	7,011	2,805
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2043	10,415	7,439	2,976
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2044	11,053	7,895	3,158
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2045	11,735	8,382	3,353
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2045	12,462	8,992	3,581
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2047	13,239	9,456	3,783
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2043	14,069	10,049	4,020
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2049	14,955	10,682	4,273
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2000	17,681	12,630	5,052
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2051	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2052	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2053	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2054	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2053	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2055	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2057	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2038	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2059	0	0.00	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2060	0	0	0
						TOTAL	703,581	502,558	201,023

TAX QUALIFIED
EXTERNAL FUND
[FIXED INCOME]

YEAR	PAYMENT	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE	STATE TAX INCOME	STATE TAXES	FED TAX INCOME	FED TAXES	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL													33,220
1996	7,142	2,392	0	180	3,347	264	3,083	817	0	8,473	41,693	7,680	49,353
1907	7,082	3,553	0	219	4,676	385	4,491	996	0	9,133	58,485	(2,176)	58,310
1998	7,082	4,054	0	258	4,458	352	4,106	821	0	9,705	68,015	(2,121)	63,893
1996	7,082	4,600	0	300	5,168	408	4,760	952	0	10,022	73,915	(1,929)	71,986
2000	7,082	5,183	0	344	5,946	470	5,476	1,095	0	10,355	82,341	(1,740)	80,601
2001	7,082	5,803	0	392	8,787	536	8,251	1,250	0	10,707	91,308	(1,550)	89,759
2002	7,082	6,483	0	441	7,669	607	7,081	1,416	0	11,079	100,838	(1,356)	99,482
2003	7,082	7,163	0	494	8,650	683	7,986	1,593	0	11,474	110,956	(1,156)	109,600
2004	7,082	7,906	0	550	9,670	784	8,906	1,781	0	11,892	121,692	(949)	120,743
2003	7,082	8,694	0	609	10,751	849	9,902	1,980	0	12,337	133,080	(733)	132,347
2003	7,082	9,529	0	871	11,896	940	10,956	2,191	0	12,809	145,158	(507)	144,649
2007	7,082	10,415	0	737	13,105	1,035	12,070	2,414	0	13,311	157,960	(270)	157,690
2008	7,082	11,354	0	809	14,383	1,136	13,247	2,849	0	13,844	171,533	15,570	187,103
2000	7,082	13,471	0	679	17,311	1,368	15,944	3,189	89	15,048	202,152	17,219	219,370
2010	7,082	15,795	0	953	16,564	1,467	17,098	3,420	73	16,964	239,335	18,574	264,909
2011	7,082	18,353	0	1,026	19,749	1,560	18,189	3,838	78	19,131	274,040	2,373	276,413
2012	7,082	19,902	0	1,106	19,083	1,508	17,575	3,515	82	20,773	297,180	0	297,166
2013	7,082	21,397	0	1,169	20,209	1,593	16,812	3,722	587	21,384	318,570	0	318,570
2014	0	22,937	0	1,274	21,663	1,711	19,951	3,690	19,376	(3,415)	315,155	0	315,155
2015	0	22,691	0	1,281	21,431	1,693	19,738	3,948	21,541	(5,751)	300,404	0	309,404
2016	0	22,277	0	1,238	21,039	1,662	19,377	3,875	35,144	(19,642)	289,762	0	289,762
2017	0	20,683	0	1,159	19,794	1,557	18,147	3,829	76,166	(81,648)	228,114	0	228,114
2018	0	16,424	0	912	15,512	1,225	14,286	2,857	80,070	(68,641)	159,473	0	169,473
2019	0	11,482	0	633	10,344	857	9,987	1,997	73,343	(65,353)	94,120	0	94,120
2020	0	8,777	0	378	6,400	508	5,895	1,179	25,479	(20,763)	73,357	0	73,357
2021	0	5,262	0	293	4,988	394	4,594	919	8,858	(3,183)	70,174	0	70,174
2002	0	5,053	0	281	4,772	377	4,395	879	2,293	1,223	71,397	0	71,397
2023	0	5,141	0	280	4,855	384	4,471	894	2,416	1,180	72,557	0	72,557
2024	0	5,224	0	200	4,934	300	4,544	909	2,550	1,085	73,642	0	73,642
2025	0	5,302	0	295	5,008	896	4,812	922	2,691	999	74,641	0	74,641
2025	0	5,374	0	299	5,076	401	4,875	935	2,839	999	75,541	0	75,541
2027	0	5,439	0	302	5,137	408	4,731	948	2,997	787	78,328	0	78,328
2020	0	5,498	0	305	5,190	410	4,760	956	3,185	650	76,987	0	76,987
2029	0	5,543	0	368	5,235	414	4,822	964	3,343	514	77,501	0	77,501
2030	0	5,560	0	310	5,270	418	4,854	971	3,533	350	77,852	0	77,852
2031	0	5,605	0	311	5,294	416	4,878	975	3,734	166	76,018	0	78,018
2032	0	5,817	0	312	5,305	419	4,986	977	3,948	(39)	77,979	0	77,979
2033	0	5,614	0	312	5,305	419	4,854	977	4,175	(268)	77,710	0	77,710
2034	0	5,595	0	311	5,264	417	4,867	973	4,417	(524)	77,187	0	77,187
2035	0	5,557	0	309	5,249	415	4,834	987	4,675	(807)	76,379	0	76,379
2030	0	5,499	0	306	5,194	410	4,783	957	4,948	(1,122)	75,257	0	75,257
2037	0	5,419	0	301	5,118	404	4,713	943	5,240	(1,470)	73,786	0	73,766
2033	0	5,313	0	295	5,018	396	4,621	924	5,551	(1,854)	71,934	0	71,934
2030	0	5,179	0	288	4,892	336	4,505	901	5,662	(2,278)	89,650	0	69,858
2040	0	5,015	0	279	4,737	374	4,362	672	6,234	(2,744)	66,912	0	68,912
2041	0	4,818	0	238	4,550	359	4,191	838	6,611	(3,258)	63,633	0	83,653
2042	0	4,533	0	255	4,328	342	3,986	797	7,011	(3,822)	59,831	0	59,831
2040	0	4,306	0	239	4,069	321	3,747	749	7,439	(4,441)	55,390	0	55,390
2044	0	3,986	0	222	3,787	298	3,489	894	7,895	(5,120)	50,270	0	50,270
2045	0	3,619	0	201	3,416	270	3,148	630	8,362	(5,863)	44,407	0	44,407
2045	0	3,197	0	178	3,020	239	2,781	558	6,992	(6,677)	37,730	0	37,730
2047	0	2,717	0	151	2,558	203	2,363	473	9,456	(7,566)	30,164	0	30,164
2045	0	2,172	0	121	2,051	162	1,889	378	10,049	(8,538)	21,626	0	21,626
2049	0	1,557	0	67	1,471	116	1,354	271	10,882	(9,599)	12,027	0	12,027
2050	0	866	0	48	818	65	753	151	12,630	(12,027)	0	(0)	0
2051	0	0	0	0	0	0	0	0	0	(0)	(0)	0	(0)
2052	0	(0)	0	0	0	0	0	0	0	(0)	(0)	0	0
2035	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2004	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2035	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2056	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2057	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2058	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2056	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2060	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
TOTAL	127,530	439,150	0	25,773	450,149	35,662	414,587	82,917	502,558	(80,129)		48,999	

TAAX QUALIFIED EXTERNAL FUND [EQUITIES]

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR	DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND
BEG BAL					1,695				11,834		45,054
1996	379	828	757	71	1,768	1,207	13,041	(7,660)	5,381	9,980	54,734
1997	172	377	1,309	(992)	774	549	5,930	2,176	8,106	9,662	64,415
1998	259	567	402	165	930	827	8,932	2,121	11,054	10,532	74,947
1999	354	774	514	260	1,199	1,127	12,181	1,929	14,111	11,149	85,098
2000	452	988	656	332	1,531	1,439	15,550	1,740	17,290	11,795	97,891
2001	553	1,210	822	388	1,919	1,784	19,953	1,550	20,603	12,471	110,302
2002	650	1,442	1,098	434	2,353	2,102	22,705	1,356	24,060	13,161	123,542
2003	770	1,684	1,211	473	2,828	2,454	26,514	1,156	27,870	13,928	137,470
2004	855	1,937	1,429	308	3,334	2,822	30,493	949	31,441	14,715	152,185
2005	1,008	2,201	1,680	540	3,874	3,297	34,648	733	35,381	15,544	187,728
2003	1,132	2,477	1,905	571	4,446	3,609	38,990	507	39,497	18,418	184,148
2007	1,204	2,765	2,163	602	5,047	4,029	43,525	270	43,798	17,339	201,485
2008	1,401	3,069	2,434	632	5,679	4,467	48,263	(15,570)	32,693	18,311	219,796
2009	1,048	2,239	3,673	(1,334)	4,298	3,355	36,026	(17,219)	18,809	18,383	238,179
2010	602	1,317	3,120	(1,894)	2,491	1,919	20,727	(18,574)	2,154	18,683	257,082
2011	69	151	2,355	(2,204)	287	220	2,373	(2,373)	0	19,351	276,413
2012	0	0	287	(287)	0	0	0	0	0	29,773	207,166
2013	0	0	0	0	0	0	0	0	0	21,354	318,570
2014	0	0	0	0	0	0	0	0	0	(3,415)	315,155
2015	0	0	0	0	0	0	0	0	0	(5,751)	309,404
2016	0	0	0	0	0	0	0	0	0	(19,642)	289,762
2017	0	0	0	0	0	0	0	0	0	(81,648)	226,114
2018	0	0	0	0	0	0	0	0	0	(68,841)	159,473
2019	0	0	0	0	0	0	0	0	0	(65,353)	94,120
2020	0	0	0	0	0	0	0	0	0	(20,763)	73,357
2021	0	0	0	0	0	0	0	0	0	(3,183)	70,174
2022	0	0	0	0	0	0	0	0	0	1,223	71,397
2023	0	0	0	0	0	0	0	0	0	1,180	72,557
2024	0	0	0	0	0	0	0	0	0	1,085	73,642
2025	0	0	0	0	0	0	0	0	0	999	74,641
2026	0	0	0	0	0	0	0	0	0	900	75,541
2027	0	0	0	0	0	0	0	0	0	787	76,328
2028	0	0	0	0	0	0	0	0	0	659	76,987
2020	0	0	0	0	0	0	0	0	0	514	77,501
2020	0	0	0	0	0	0	0	0	0	350	77,852
2031	0	0	0	0	0	0	0	0	0	166	78,018
2032	0	0	0	0	0	0	0	0	0	(39)	77,979
2033	0	0	0	0	0	0	0	0	0	(268)	77,710
2054	0	0	0	0	0	0	0	0	0	(524)	77,187
2055	0	0	0	0	0	0	0	0	0	(807)	78,379
2036	0	0	0	0	0	0	0	0	0	(1,122)	75,257
2037	0	0	0	0	0	0	0	0	0	(1,470)	73,788
2058	0	0	0	0	0	0	0	0	0	(1,854)	71,934
2009	0	0	0	0	0	0	0	0	0	(2,276)	69,650
2049	0	0	0	0	0	0	0	0	0	(2,744)	66,912
2041	0	0	0	0	0	0	0	0	0	(3,258)	83,683
2042	0	0	0	0	0	0	0	0	0	(3,822)	59,631
2043	0	0	0	0	0	0	0	0	0	(4,441)	55,390
2044	0	0	0	0	0	0	0	0	0	(5,120)	50,270
2045	0	0	0	0	0	0	0	0	0	(5,863)	44,407
2049	0	0	0	0	0	0	0	0	0	(6,677)	37,730
2047	0	0	0	0	0	0	0	0	0	(7,566)	30,164
2049	0	0	0	0	0	0	0	0	0	(8,538)	21,626
2049	0	0	0	0	0	0	0	0	0	(9,599)	12,027
2056	0	0	0	0	0	0	0	0	0	(12,027)	0
2051	0	0	0	0	0	0	0	(0)	0	0	0
2052	0	0	0	0	0	0	0	(0)	0	0	0
2053	0	0	0	0	0	0	1	(0)	1	0	1
2054	0	0	0	0	0	0	1	(0)	1	0	1
2053	0	0	0	0	0	0	1	(0)	1	0	1
2055	0	0	0	0	0	0	1	(0)	1	0	1
2057	0	0	0	0	0	0	1	(0)	1	0	1
2058	0	0	0	0	0	0	1	(0)	1	0	1
2059	0	0	0	0	0	0	1	(0)	1	0	1
2000	0	0	0	0	0	0	1	(0)	1	0	1
TTOTAL	11,004	24,072	25,767	(1,695)	44,454	35,078		(45,909)		(45,953)	

NONTAX QUALIFIED
EXTERNAL FUND
[FIXED INCOME]

YYEAR	ANNUITY PAY	TAX PAY ON INVEST EARN	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE (TOT FUND)	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL										0
1996	1,277	(1,326)	0	0	128	0	(176)	(176)	176	0
1997	814	(1,276)	0	0	140	0	(602)	(602)	602	0
1998	814	(1,278)	0	0	152	0	(816)	(616)	616	0
1999	814	(1,289)	0	0	165	0	(640)	(640)	940	0
2005	814	(1,353)	0	0	179	0	(698)	(695)	698	0
2001	814	(1,408)	0	0	195	0	(784)	(784)	764	0
2002	814	(1,493)	0	0	211	0	(891)	(891)	891	0
2005	814	(1,601)	0	0	229	0	(1,016)	(1,016)	1,016	0
2004	814	(1,723)	0	0	249	0	(1,158)	(1,158)	1,158	0
2005	814	(1,860)	0	0	269	0	(1,315)	(1,315)	1,315	0
2006	814	(2,009)	0	0	202	0	(1,487)	(1,487)	1,487	0
2007	814	(2,171)	0	0	315	0	(1,673)	(1,673)	1,873	0
2008	814	(2,346)	0	0	341	0	(1,873)	(1,873)	1,673	0
2000	814	(2,535)	0	0	368	28	(2,117)	(2,117)	2,117	0
2010	814	(2,738)	0	0	397	29	(2,351)	(2,351)	2,351	0
2011	814	(2,955)	0	0	428	31	(2,801)	(2,801)	20,059	17,458
2012	814	(3,600)	0	843	482	33	(2,337)	15,121	23,698	39,019
2013	814	(3,443)	0	2,107	492	235	(1,258)	37,769	25,280	63,049
2014	0	(3,695)	0	3,405	522	7,750	(7,953)	55,085	29,768	64,854
2015	0	(2,734)	0	4,582	517	8,616	(7,285)	77,569	27,181	104,750
2018	0	(2,030)	0	5,858	506	14,058	(10,037)	93,813	24,021	117,834
2017	0	(1,313)	0	6,383	471	30,466	(25,986)	91,940	0	91,946
2016	0	(107)	0	4,965	368	32,028	(27,838)	84,408	0	84,408
2019	0	(75)	0	3,478	258	29,337	(28,192)	38,216	0	38,216
2020	0	(45)	0	2,064	153	10,191	(8,326)	29,691	0	29,691
2021	0	(35)	0	1,614	120	2,743	(1,264)	28,607	0	28,607
2022	0	(35)	0	1,545	114	917	480	29,087	0	29,987
2023	0	(34)	0	1,571	118	987	453	29,540	0	29,549
2024	0	(34)	0	1,595	116	1,020	422	20,953	0	20,963
2025	0	(35)	0	1,818	120	1,076	387	30,350	0	30,350
2026	0	(35)	0	1,839	121	1,136	346	30,698	0	30,896
2027	0	(36)	0	1,858	123	1,199	300	30,996	0	30,996
2028	0	(35)	0	1,874	124	1,288	248	31,244	0	31,244
2028	0	(35)	0	1,887	125	1,337	188	31,432	0	31,432
2033	0	(37)	0	1,697	126	1,413	122	31,354	0	31,554
2031	0	(37)	0	1,704	126	1,494	47	31,601	0	31,601
2032	0	(37)	0	1,706	125	1,579	(35)	31,595	0	31,566
2033	0	(37)	0	1,705	128	1,670	(129)	31,436	0	31,456
2034	0	(37)	0	1,698	126	1,767	(232)	31,204	0	31,294
2035	0	(36)	0	1,685	125	1,870	(346)	30,656	0	30,858
2036	0	(36)	0	1,666	123	1,979	(473)	30,386	0	30,386
2037	0	(35)	0	1,041	122	2,096	(812)	29,774	0	29,774
2058	0	(36)	0	1,666	119	2,220	(766)	29,007	0	20,907
2009	0	(34)	0	1,566	118	2,353	(936)	28,071	0	28,071
2040	0	(33)	0	1,516	112	2,494	(1,123)	20,848	0	26,648
2041	0	(31)	0	1,455	106	2,644	(1,328)	25,620	0	25,020
2042	0	(36)	0	1,383	102	2,605	(1,553)	24,069	0	24,069
2043	0	(28)	0	1,300	96	2,976	(1,860)	22,266	0	22,266
2044	0	(26)	0	1,202	89	3,158	(2,071)	20,195	0	20,195
2045	0	(24)	0	1,091	81	3,353	(2,387)	17,628	0	17,828
2049	0	(21)	0	963	71	3,581	(2,690)	15,138	0	15,136
2047	0	(18)	0	817	61	3,783	(3,043)	12,095	0	12,095
2045	0	(14)	0	683	48	4,029	(3,429)	8,666	0	8,666
2049	0	(10)	0	458	35	4,273	(3,850)	4,816	0	4,818
2056	0	(6)	0	260	19	5,082	(4,817)	(0)	0	0
2051	0	0	0	0	(0)	0	0	0	(0)	0
2052	0	0	0	0	(0)	0	0	0	(0)	0
2033	0	0	0	0	(0)	0	0	0	(0)	0
2054	0	0	0	0	(0)	0	0	0	(0)	0
2055	0	0	0	0	(0)	0	0	0	(0)	0
2053	0	0	0	0	(0)	0	0	0	(0)	0
2057	0	0	0	0	(0)	0	0	0	(0)	0
2058	0	0	0	0	(0)	0	0	0	(0)	0
2058	0	0	0	0	(0)	0	0	0	(0)	0
2060	0	0	0	0	(0)	0	0	0	(0)	0
TTOTAL	15,113	(48,690)	0	75,947	10,947	201,023	(167,605)		167,605	

NONTAX QUALIFIED EXTERNAL FUND (EQUITIES)

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR	DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND	TOTAL QUAL AND NONQUAL FUNDS
BEG BAL					7,876				31,919		31,919	76,973
1990	1,021	2,234	3,083	(799)	7,077	3,256	35,175	(176)	34,998	3,079	34,998	80,732
1997	1,120	2,458	2,803	(433)	6,844	3,570	38,558	(602)	37,956	2,988	37,956	102,381
1998	1,215	2,858	2,803	(206)	6,439	3,873	41,839	(616)	41,222	3,256	41,222	118,169
1990	1,319	2,866	2,964	22	6,481	4,205	45,427	(640)	44,787	3,564	44,787	130,883
2000	1,433	3,135	2,942	193	6,653	4,558	49,355	(698)	48,657	3,870	48,657	145,547
2001	1,557	3,408	3,084	322	6,975	4,963	53,619	(784)	52,866	4,179	52,536	163,197
2002	1,801	3,609	3,274	425	7,408	5,386	58,225	(891)	57,834	4,493	57,384	180,876
2003	1,835	4,013	3,503	510	7,910	5,848	63,182	(1,016)	62,186	4,832	62,166	199,836
2004	1,980	4,352	3,768	584	8,404	6,341	68,507	(1,158)	67,349	5,183	67,348	219,533
2005	2,155	4,714	4,083	651	9,149	8,870	74,218	(1,315)	72,903	5,554	72,905	240,631
2008	2,333	5,103	4,388	715	9,861	7,458	80,339	(1,487)	78,653	5,950	78,653	262,999
2007	2,523	5,520	4,742	778	10,630	8,043	88,996	(1,873)	85,223	6,370	85,223	288,708
2008	2,727	5,956	5,125	841	11,400	8,693	93,916	(1,873)	92,042	6,819	92,942	311,838
2000	2,945	6,443	5,537	906	12,385	9,368	101,431	(2,117)	99,314	7,271	99,314	337,493
2010	3,176	8,952	5,982	970	13,355	10,130	109,444	(2,351)	107,093	7,779	107,093	364,155
2011	3,427	7,408	6,458	1,040	14,395	10,923	116,016	(20,059)	97,957	6,323	115,416	391,829
2012	3,135	6,657	8,088	(1,231)	13,184	9,992	107,949	(23,896)	84,051	7,854	123,070	420,256
2013	2,690	5,834	7,754	(1,871)	11,293	8,573	92,824	(25,280)	87,345	7,324	130,393	448,964
2014	2,155	4,714	6,960	(2,246)	9,648	6,869	74,214	(20,766)	44,445	(1,094)	129,299	444,455
2015	1,422	3,111	6,188	(3,077)	5,971	4,533	48,979	(27,181)	21,798	(2,752)	126,543	435,952
2016	698	1,526	4,566	(3,043)	2,928	2,223	24,021	(24,021)	0	(8,714)	117,834	407,596
2017	0	0	2,928	(2,928)	0	0	0	0	0	(25,863)	91,948	320,060
2018	0	0	0	0	0	0	0	0	0	(27,536)	84,405	223,881
2019	0	0	0	0	0	0	0	0	0	(28,192)	36,216	132,336
2020	0	0	0	0	0	0	0	0	0	(8,326)	29,691	193,248
2021	0	0	0	0	0	0	0	0	0	(1,284)	28,607	98,782
2022	0	0	0	0	0	0	0	0	0	400	29,987	100,484
2023	0	0	0	0	0	0	0	0	0	453	29,549	102,097
2024	0	0	0	0	0	0	0	0	0	422	29,963	103,605
2025	0	0	0	0	0	0	0	0	0	337	30,650	104,990
2020	0	0	0	0	0	0	0	0	0	346	30,695	106,237
2027	0	0	0	0	0	0	0	0	0	308	30,999	107,324
2020	0	0	0	0	0	0	0	0	0	245	31,244	106,231
2029	0	0	0	0	0	0	0	0	0	188	31,432	106,933
2030	0	0	0	0	0	0	0	0	0	122	31,554	109,405
2031	0	0	0	0	0	0	0	0	0	47	31,801	109,619
2032	0	0	0	0	0	0	0	0	0	(39)	31,565	109,544
2030	0	0	0	0	0	0	0	0	0	(129)	31,436	109,147
2034	0	0	0	0	0	0	0	0	0	(232)	31,204	198,391
2035	0	0	0	0	0	0	0	0	0	(346)	30,858	107,237
2036	0	0	0	0	0	0	0	0	0	(473)	30,306	105,843
2037	0	0	0	0	0	0	0	0	0	(812)	29,774	103,561
2038	0	0	0	0	0	0	0	0	0	(766)	20,007	100,941
2039	0	0	0	0	0	0	0	0	0	(936)	28,071	97,727
2040	0	0	0	0	0	0	0	0	0	(1,123)	28,948	93,860
2041	0	0	0	0	0	0	0	0	0	(1,328)	25,020	69,273
2042	0	0	0	0	0	0	0	0	0	(1,653)	24,060	83,897
2043	0	0	0	0	0	0	0	0	0	(1,800)	22,266	77,856
2044	0	0	0	0	0	0	0	0	0	(2,071)	20,105	70,465
2045	0	0	0	0	0	0	0	0	0	(2,307)	17,828	62,235
2040	0	0	0	0	0	0	0	0	0	(2,690)	15,138	52,869
2047	0	0	0	0	0	0	0	0	0	(3,043)	12,095	42,259
2048	0	0	0	0	0	0	0	0	0	(3,420)	8,666	30,292
2048	0	0	0	0	0	0	0	0	0	(3,850)	4,616	16,844
2056	0	0	0	0	0	0	0	(0)	(0)	(4,617)	(0)	0
2051	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)
2052	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	0
2053	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2004	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2035	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2056	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2057	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2058	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2059	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2038	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
TOTAL	42,568	93,118	100,994	(7,876)	195,694	135,666		(187,695)		(31,920)		

Calculation of Revenue Requirements Related to Nonqualified Fund — 02/14/96

CAPITAL COST	COST	% OF CAP		YEAR	BOOK INCOME EFFECTS: DEP NON QUAL ANN	BOOK INCOME EFFECTS: DEP NQ RETAIN EARN	FED TAX SAV DEPR	STATE TAX SAV DEPR	FED AND STATE TAX BENEFIT OF DEC EXPEND	FEDERAL TAX EXEMPT INVEST EARN (TAX FOR STAT	DIV INCOME (SUBJECT FED & STATE DIVIDEND EXCLUSION)	TAX ABLE INVEST EARN (REAL CAP GAIN+ADMIN +TAX INT)	UNREALIZED CAP GAIN	CURRENT STATE TAX (NET OF FED BEN)	CURRENT FED TAX	DEFERRED FED & STATE TAXES ON UNREAL CAP GAIN
COMMON EQUITY	12.00%	52.00%	****													
PREFERRED	7.25%	8.00%	****													
DEBT	7.79%	42.00%	****	PRIOR YRS			12,819	1,816								(3,161)
				1996	(1,277)	(1,802)	1,078	156	0	0	1,021	2,903	(799)	(202)	(1,124)	321
				1997	(814)	(2,154)	1,039	152	0	0	1,120	2,743	(433)	(198)	(1,078)	174
BEFORE TAX COST		14.42%		1996	(814)	(2,443)	1,140	187	0	0	1,215	2,711	(206)	(202)	(1,077)	82
WEIGHTED COST		9.95%		1999	(814)	(2,750)	1,248	183	0	0	1,319	2,690	22	(206)	(1,083)	(9)
AFTER TAX COST		8.63%		2000	(814)	(3,056)	1,354	199	0	0	1,433	2,763	193	(215)	(1,118)	(77)
				2001	(814)	(3,365)	1,483	215	0	0	1,557	2,869	322	(228)	(1,175)	(129)
CUSTOMER DISCOUNT RATE		10.00%	****	2002	(814)	(3,695)	1,574	231	0	0	1,691	3,062	425	(244)	(1,249)	(171)
				2003	(814)	(4,018)	1,691	248	0	0	1,835	3,274	510	(202)	(1,339)	(205)
				2004	(814)	(4,369)	1,814	266	0	0	1,989	3,519	584	(283)	(1,441)	(234)
				2000	(814)	(4,741)	1,944	285	0	0	2,155	3,794	651	(305)	(1,554)	(281)
				2006	(814)	(5,136)	2,082	306	0	0	2,333	4,096	715	(330)	(1,679)	(287)
				2007	(814)	(5,566)	2,230	327	0	0	2,523	4,426	778	(357)	(1,814)	(312)
				2003	(814)	(8,006)	2,387	350	0	0	2,727	4,764	841	(386)	(1,961)	(338)
1,268,740				2000	(814)	(8,485)	2,545	373	11	0	2,945	5,109	908	(417)	(2,118)	(364)
				2010	(814)	(6,994)	2,723	399	12	0	3,178	5,585	970	(450)	(2,288)	(389)
				2011	(814)	(7,540)	2,913	427	12	0	3,427	8,028	1,040	(486)	(2,470)	(417)
				2012	(814)	(8,873)	2,679	393	13	943	3,135	7,827	(1,231)	(601)	(2,999)	494
DEFERRED TAX ACCOUNTING				2013	(814)	(8,745)	2,563	376	94	2,107	2,690	7,262	(1,871)	(819)	(2,824)	751
				2014	0	(8,656)	(395)	(58)	3,111	3,405	2,155	6,438	(2,246)	(816)	(2,480)	901
FEDERAL (1=YES,0=NO)		1	****	2015	0	(5,865)	(994)	(145)	3,458	4,582	1,422	5,671	(3,077)	(600)	(2,134)	1,285
STATE (1=YES,0=NO)		1	****	2016	0	(5,344)	(3,147)	(459)	5,842	5,656	698	4,062	(3,043)	(535)	(1,495)	1,221
				2017	0	(4,579)	(9,348)	(1,365)	12,228	8,363	0	2,457	(2,928)	(453)	(860)	1,175
OPEN BAL - FED DEP		12,619	****	2018	0	(4,490)	(9,944)	(1,452)	12,854	4,985	0	(368)	0	(236)	129	0
OPEN BAL - STATE DEP		1,818	****	2019	0	(3,145)	(9,458)	(1,361)	11,774	3,478	0	(258)	0	(165)	90	0
				2020	0	(1,860)	(3,006)	(459)	4,090	2,064	0	(153)	0	(98)	54	0
OPEN BAL - FED&STATE				2021	0	(1,460)	(464)	(68)	1,101	1,814	0	(120)	0	(77)	42	0
UNREALIZED GAIN		(3,161)	****	2022	0	(1,397)	166	25	368	1,545	0	(114)	0	(73)	40	0
				2023	0	(1,420)	159	23	368	1,571	0	(116)	0	(75)	41	0
				2024	0	(1,443)	148	22	409	1,595	0	(118)	0	(76)	41	0
				2025	0	(1,460)	135	20	432	1,818	0	(120)	0	(77)	42	0
				2020	0	(1,482)	121	18	458	1,639	0	(121)	0	(78)	42	0
				2627	0	(1,499)	105	15	481	1,656	0	(123)	0	(79)	43	0
				2628	0	(1,514)	87	13	508	1,674	0	(124)	0	(80)	43	0
				2029	0	(1,526)	66	10	537	1,887	0	(125)	0	(80)	44	0
				2030	0	(1,535)	43	6	587	1,697	0	(126)	0	(81)	44	0
				2031	0	(1,541)	17	2	599	1,704	0	(126)	0	(81)	44	0
				2032	0	(1,543)	(13)	(2)	834	1,706	0	(126)	0	(81)	44	0
				2033	0	(1,541)	(46)	(7)	670	1,705	0	(126)	0	(81)	44	0
				2034	0	(1,535)	(83)	(12)	709	1,698	0	(125)	0	(81)	44	0
				2033	0	(1,524)	(125)	(18)	750	1,685	0	(125)	0	(80)	44	0
				2030	0	(1,507)	(170)	(25)	794	1,666	0	(123)	0	(79)	43	0
				2037	0	(1,484)	(220)	(32)	841	1,841	0	(122)	0	(78)	43	0
				2030	0	(1,484)	(276)	(40)	891	1,608	0	(119)	0	(76)	42	0
				2039	0	(1,416)	(337)	(49)	944	1,566	0	(116)	0	(74)	41	0
				2040	0	(1,371)	(404)	(59)	1,001	1,516	0	(112)	0	(72)	39	0
				2041	0	(1,316)	(478)	(70)	1,051	1,455	0	(108)	0	(69)	36	0
				2042	0	(1,251)	(559)	(82)	1,126	1,383	0	(102)	0	(65)	36	0
				2043	0	(1,175)	(648)	(96)	1,194	1,300	0	(96)	0	(62)	34	0
				2044	0	(1,087)	(746)	(109)	1,267	1,202	0	(89)	0	(57)	31	0
				2045	0	(986)	(852)	(124)	1,346	1,091	0	(81)	0	(52)	28	0
				2046	0	(871)	(969)	(141)	1,429	963	0	(71)	0	(46)	25	0
				2047	0	(739)	(1,006)	(160)	1,518	817	0	(81)	0	(39)	21	0
				2043	0	(591)	(1,235)	(180)	1,613	653	0	(48)	0	(31)	17	0
				2049	0	(423)	(1,386)	(202)	1,715	468	0	(35)	0	(22)	12	0
				2030	0	(235)	(1,734)	(253)	2,028	260	0	(19)	0	(12)	7	0
				2051	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2052	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2003	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2054	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2055	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2056	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2057	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2058	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2059	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2060	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				TOTAL	(15,113)	(153,991)	(0)	(0)	80,681	75,947	42,568	90,047	(7,876)	(10,710)	(35,986)	0

NET INCOME IMPACT	REV REQ IMPACT	CAPITAL IMPACTS: TOT FED/STATE DEFERREO TAX BALANCES	CAPITAL IMPACTS: REV REQ IMPACT	TOTAL NQ REV REQ IMPACT	TOTAL DECOMM REV REQ IMPACT	NPV OF TOT REV REQ
		11,275				
279	(467)	12,831	1,626	1,159	8,301	7,471
551	(920)	14,196	1,850	930	8,011	14,167
578	(961)	15,585	2,047	1,086	8,167	20,304
608	(1,015)	17,007	2,247	1,232	6,314	25,982
662	(1,106)	18,483	2,452	1,347	8,428	31,215
734	(1,226)	20,031	2,665	1,438	8,521	36,025
821	(1,371)	21,666	2,888	1,517	6,599	40,438
921	(1,538)	23,400	3,124	1,586	8,668	44,461
1,032	(1,724)	25,246	3,374	1,651	8,732	48,185
1,154	(1,928)	27,214	3,641	1,713	8,794	51,575
1,287	(2,150)	29,315	3,924	1,775	8,856	54,679
1,431	(2,390)	31,559	4,227	1,837	6,919	57,521
1,586	(2,649)	33,959	4,551	1,902	8,984	60,124
1,752	(2,927)	36,514	4,897	1,970	9,052	62,507
1,931	(3,226)	39,247	5,265	2,040	9,122	54,691
2,121	(3,544)	42,169	5,959	2,118	9,197	66,693
2,766	(4,620)	45,736	6,081	1,461	6,543	66,383
2,971	(4,962)	49,426	6,595	1,633	8,715	69,950
3,559	(5,945)	49,674	7,127	1,182	1,182	70,143
3,554	(5,937)	49,971	7,192	1,255	1,255	70,330
3,257	(5,441)	47,586	7,206	1,765	1,765	70,568
2,690	(4,494)	38,048	6,862	2,368	2,368	70,859
1,459	(2,437)	26,653	5,467	3,050	3,050	71,200
936	(1,563)	15,814	3,643	2,280	2,260	71,431
645	(1,078)	12,369	2,280	1,203	1,203	71,542
570	(952)	11,888	1,764	832	832	71,612
561	(957)	12,031	1,707	771	771	71,671
570	(952)	12,213	1,735	783	783	71,725
579	(967)	12,382	1,781	794	794	71,775
587	(961)	12,537	1,780	805	805	71,821
595	(994)	12,676	1,808	614	814	71,864
602	(1,005)	12,797	1,826	823	823	71,903
607	(1,015)	12,898	1,845	831	831	71,938
612	(1,023)	12,972	1,860	837	837	71,971
618	(1,029)	13,021	1,671	642	642	72,001
618	(1,033)	13,040	1,876	845	845	72,028
619	(1,034)	13,025	1,860	846	846	72,053
617	(1,031)	12,972	1,676	647	847	72,076
614	(1,025)	12,876	1,871	846	846	72,097
608	(1,015)	12,733	1,657	842	842	72,115
599	(1,001)	12,538	1,836	835	835	72,132
589	(983)	12,280	1,808	825	825	72,147
575	(960)	11,969	1,772	611	811	72,160
558	(932)	11,583	1,726	794	794	72,172
537	(898)	11,120	1,670	772	772	72,183
513	(857)	10,571	1,603	748	748	72,192
485	(809)	9,930	1,524	715	715	72,200
451	(754)	9,188	1,432	678	678	72,207
413	(690)	8,333	1,325	835	635	72,213
369	(617)	7,357	1,202	585	585	72,218
319	(533)	6,247	1,061	528	528	72,222
202	(438)	4,991	001	483	483	72,226
196	(331)	3,576	720	383	388	72,226
126	(211)	1,987	516	304	304	72,230
40	(67)	(0)	287	220	220	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
(0)	0	(0)	(0)	(0)	(0)	72,231
54,293	(96,692)		153,642	93,149	190,680	

Schcdule B

Accelerate to 2002

Without Tax Restrietiou

DECOMMISSIONING ANALYSIS FOR 1902 PSCW DEPRECIATION STUDY

02/14/96

ASSUMPTIONS

STARTING YEAR FOR ANALYSIS	1996	****
LAST PAYMENT TO FUND (END OF YEAR)	2002	****
REMAINING NUMBER OF PAYMENTS	7	
FIRST PAYMENT FOR DECOMMISSION (END OF YEAR)	2008	
YEAR LICENSE EXPIRES	2013	
YEARS TO END OF LICENSE	18	
NO. OF YEARS FROM 1/1/74 - 12/31/08	35	****
NO. OF YEARS FROM 1/1/84 - 12/31/08	25.0	****
% OF COST ELIGIBLE FOR TAX QUALIFIED FUND	71.4286%	
FUTURE COST OF DECOMMISSIONING	703,561	
FUTURE COST ELIGIBLE FOR TAX QUALIFIED FUND	502,558	
FUTURE COST NOT ELIG FOR TAX QUALIFIED FUND	201,023	
PRIOR PAYMENTS TO QUAL FUND	45,054	****
PRIOR INVEST EARN IN QUAL FUND	0	****
BEGINNING BALANCE IN TAX QUALIFIED FUND	45,034	
TOTAL BEGIN BALANCE IN NON TAX QUAL FUND	31,919	****

CALCULATIONS

ORDER OF DECOMM EXPENDITURES - (1=QUAL FIRST, 2=NONQUAL FIRST, 3=PRORATA)	3.00	3.00	****
EQUIT HELD - (1=Q 1st, 2=NQ 1st)	2.00	2.00	****
NONQUAL TAXES WITHDRAWN FROM FUND (1=YES, 2=NO)	1.00	1.00	****
ANNUAL PAYMENT - QUALIFIED FUND		15,182	
ANNUAL PAY - NON QUALIFIED FUND		1,563	

0	QUAL
(0)	NQUAL
61,516	DISPVRR
6,301	1ST YEAR RR

***** - Indicates this is an inputted assumption.
^^^^^ - Indicates this is input coming in through a file link.

FED TAX RATE (ON INVEST RETURNS)	35.0000%	****
STATE STATUTORY TAX RATE (ON INVEST RETURNS)	7.9000%	****
STATE EFFECTIVE TAX RATE	5.1350%	
FEDERAL DIVIDEND EXCLUSION (CORP)	70.00%	****
STATE DIVIDEND EXCLUSION (CORP)	0.00%	****

QUALIFIED FUND

EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****
EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****
EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%	
EXPECTED ANNUAL CAPITAL GAIN REALIZATION % (% APPLIED TO CURRENT YEAR AND BEGINNING OF YEAR CUMMULATIVE UNREALIZED GAIN)	30.00%	****

NONQUALIFIED FUND

EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****
EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****
EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%	
EXPECTED ANNUAL CAPITAL GAIN REALIZATION % (% APPLIED TO CURRENT YEAR AND BEGINNING OF YEAR CUMMULATIVE UNREALIZED GAIN)	30.00%	****
EXPECTED TAXABLE FIXED INCOME RETURN	7.20%	****
EXPECTED FEDERAL TAX EXEMPT FIXED INCOME RET	5.40%	****
EXPECTED ADMIN EXPENSE	0.4000%	****

BEGINNING BAL QUAL EQUITIES	11,834	****
BEGINNING BAL QUAL FIXED INCOME	33,220	****
TOTAL BEGINNING BALANCE QUAL FUND	45,054	
BEGINNING BAL QUAL FUND UNREALIZED GAINS	1,695	****
BEGINNING BAL NONQUAL EQUITIES	31,919	****
BEGINNING BAL NONQUAL FIXED INCOME	0	****
TOTAL BEGINNING BALANCE NONQUAL FUND	31,919	
BEGINNING BAL NONQUAL FUND UNREALIZED GAINS	7,876	****

	TOTAL PORT SPLIT		QUAL PORT SPLIT			
YEAR	% OF TOTAL POR EQUITIES ****	% OF TOTAL POR FIXED INC	% OF QUAL POR EQUITIES	% OF QUAL POR FIXED INC	% OF QUAL FIX IN POR TAX FIX IN ****	% OF QUAL FIX IN POR TE FIX INC
1996	45.00%	55.00%	9.83%	90.17%	100.00%	0.00%
1997	45.00%	55.00%	15.55%	84.45%	100.00%	0.00%
1998	45.00%	55.00%	19.17%	80.83%	100.00%	0.00%
1999	45.60%	55.00%	21.60%	78.40%	100.00%	0.00%
2000	45.00%	55.00%	23.33%	76.67%	100.00%	0.00%
2001	45.00%	55.00%	24.60%	75.40%	100.00%	0.00%
2002	45.00%	55.00%	25.57%	74.43%	100.00%	0.00%
2003	45.60%	55.00%	25.32%	74.68%	100.00%	0.00%
2004	45.00%	55.00%	25.08%	74.92%	100.00%	0.00%
2000	45.00%	55.00%	24.83%	75.17%	100.00%	0.00%
2006	45.60%	55.00%	24.56%	75.44%	100.00%	0.00%
2007	45.00%	55.00%	24.30%	75.70%	100.00%	0.00%
2008	40.00%	60.00%	17.11%	82.89%	100.00%	0.00%
2009	35.00%	65.00%	9.78%	90.22%	100.00%	0.00%
2010	30.00%	70.00%	2.32%	97.68%	100.00%	0.00%
2011	25.00%	75.00%	0.00%	100.00%	100.00%	0.00%
2012	20.00%	60.00%	0.00%	100.00%	100.00%	0.00%
2013	15.00%	65.00%	0.60%	190.00%	190.00%	0.00%
2014	10.00%	90.00%	0.00%	100.00%	100.00%	0.00%
2015	5.00%	95.00%	0.00%	100.00%	100.00%	0.00%
2016	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2017	0.60%	100.00%	0.00%	190.00%	100.00%	0.00%
2018	0.00%	100.00%	0.00%	190.00%	100.00%	0.00%
2019	0.00%	100.00%	0.00%	190.00%	190.00%	0.00%
2020	0.00%	100.00%	0.00%	109.00%	100.00%	0.00%
2021	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2022	0.00%	100.00%	0.00%	190.60%	100.00%	0.00%
2023	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2024	0.00%	100.00%	0.60%	100.00%	100.00%	0.00%
2025	0.00%	100.00%	0.60%	190.00%	190.00%	0.00%
2026	0.00%	100.00%	0.00%	190.00%	100.00%	0.00%
2027	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2028	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2029	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2030	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2031	0.00%	100.00%	0.00%	100.60%	100.00%	0.00%
2032	0.00%	100.00%	0.60%	100.60%	100.00%	0.00%
2033	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2034	0.60%	100.00%	0.00%	190.00%	100.00%	0.00%
2035	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2036	0.60%	100.00%	0.00%	100.00%	100.00%	0.00%
2037	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2038	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2039	0.00%	108.00%	0.00%	100.00%	100.00%	0.00%
2040	0.00%	100.00%	0.60%	100.60%	100.00%	0.00%
2041	0.00%	108.00%	0.00%	100.00%	100.00%	0.00%
2042	0.00%	100.00%	0.00%	190.00%	100.00%	0.00%
2043	0.00%	160.00%	0.00%	100.00%	100.00%	0.00%
2044	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2045	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2046	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2047	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2040	0.00%	100.00%	0.00%	190.00%	100.00%	0.00%
2049	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2050	0.00%	100.00%	100.07%	-0.07%	100.00%	0.00%
2051	0.00%	100.00%	100.17%	-0.17%	100.00%	0.00%
2052	0.00%	100.00%	100.10%	-0.10%	100.00%	0.00%
2053	0.00%	100.00%	90.93%	0.07%	100.00%	0.00%
2004	0.60%	108.00%	90.70%	0.30%	100.00%	0.00%
2053	0.00%	100.00%	90.42%	0.58%	100.00%	0.00%
2056	0.00%	100.00%	90.12%	0.88%	100.00%	0.00%
2057	0.00%	100.00%	98.60%	1.20%	100.00%	0.00%
2058	0.00%	100.00%	98.48%	1.52%	100.60%	0.00%
2050	0.00%	100.00%	98.15%	1.85%	100.00%	0.00%
2050	0.00%	100.00%	97.82%	2.18%	100.00%	0.00%

NONQUAL PORT SP

DECOMMISSIONING EXPENDITURE

% OF NQUAL PORT EQUITIES	% OF NQUAL PORT FIXED INC	% OF NQUAL FIX IN PORT TAX FIX INC ****	% OF NQUAL FIX IN PORT TE FIX INC	QUAL FED TAX RATE ****	QUAL STATE STAT TAX RATE ****	YEAR	AMOUNT AAAA	FROM QUALIFIED	TOTAL FROM NON QUAL
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	1996	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	1997	0	0	0
100.00%	0.00%	0.60%	100.00%	20.00%	7.90%	1998	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	1999	0	0	0
100.00%	0.00%	0.60%	100.60%	20.00%	7.90%	2008	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2001	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2002	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2003	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2004	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2005	0	0	0
100.00%	0.00%	0.00%	190.00%	20.00%	7.00%	2006	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2007	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2008	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2009	97	89	28
100.00%	0.00%	0.00%	190.00%	20.00%	7.00%	2010	102	73	29
86.94%	13.00%	0.00%	190.00%	20.00%	7.00%	2011	109	78	31
69.02%	39.98%	0.00%	100.00%	20.00%	7.90%	2012	115	82	33
51.63%	48.37%	0.00%	100.00%	20.00%	7.90%	2013	822	587	235
34.37%	65.63%	0.00%	100.00%	20.00%	7.90%	2014	27,127	19,376	7,750
17.22%	82.78%	0.00%	100.00%	20.00%	7.90%	2015	30,158	21,541	8,616
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2016	49,202	35,144	14,058
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2017	108,653	76,188	30,466
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2016	112,098	60,070	32,026
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2019	102,860	73,343	29,337
0.00%	100.00%	0.60%	100.00%	20.00%	7.90%	2020	35,670	25,479	10,191
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2021	9,601	6,856	2,743
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2022	3,210	2,203	917
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2023	3,385	2,418	967
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2024	3,570	2,550	1,020
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2025	3,787	2,691	1,078
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2026	3,975	2,839	1,136
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2027	4,196	2,997	1,199
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2028	4,431	3,185	1,266
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2029	4,681	3,343	1,337
0.00%	100.00%	0.00%	108.00%	20.00%	7.00%	2030	4,946	3,533	1,413
0.00%	100.00%	0.00%	100.90%	20.00%	7.00%	2031	5,228	3,734	1,494
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2032	5,527	3,948	1,579
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2033	5,846	4,175	1,670
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2034	6,184	4,417	1,767
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2035	6,545	4,675	1,670
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2036	8,928	4,946	1,979
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2037	7,330	5,240	2,096
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2030	7,771	5,551	2,220
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2030	8,235	5,882	2,353
0.00%	100.00%	0.00%	190.00%	20.00%	7.90%	2040	8,728	8,234	2,494
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2041	9,255	6,611	2,644
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2042	9,816	7,011	2,805
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2043	10,415	7,439	2,976
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2044	11,053	7,895	3,158
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2045	11,735	6,362	3,353
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%	2046	12,462	6,902	3,561
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2047	13,239	9,456	3,783
0.00%	108.00%	0.00%	100.00%	20.00%	7.00%	2048	14,969	10,049	4,020
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%	2049	14,955	10,662	4,273
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2050	17,881	12,630	5,052
100.00%	0.00%	0.00%	190.00%	20.00%	7.00%	2051	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2062	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2053	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2034	0	0	0
100.00%	0.00%	0.90%	100.00%	20.00%	7.90%	2035	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2036	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2057	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2058	0	0	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%	2059	0	0.00	0
100.00%	0.00%	0.00%	100.00%	20.00%	7.90%	2060	0	0	0
						TOTAL	703,561	502,568	201,023

TRAX QUALIFIED
EXTERNAL FUND
[FIXED INCOME]

YEAR	PAYMENT	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE	STATE TAX INCOME	STATE TAXES	FED TAX INCOME	FED TAXES	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL													33,220
1996	7,142	2,392	0	180	3,347	204	3,033	817	0	8,473	41,693	7,860	49,353
1997	15,162	3,553	0	219	4,878	385	4,491	808	0	17,213	66,565	(5,345)	81,221
1998	15,152	4,408	0	290	4,948	391	4,557	911	0	17,977	79,196	(5,143)	74,055
1999	15,162	5,332	0	388	6,225	492	5,733	1,147	0	16,489	92,543	(4,615)	87,729
2000	15,182	8,316	0	448	7,638	603	7,035	1,407	0	19,020	108,749	(4,475)	102,274
2001	15,182	7,364	0	534	9,176	725	8,451	1,690	0	19,578	121,860	(4,123)	117,727
2002	15,162	8,476	0	625	10,833	868	9,977	1,996	0	20,182	137,889	(3,755)	134,134
2003	0	9,658	0	721	12,606	896	11,810	2,322	0	5,819	139,753	2,536	142,289
2004	0	10,245	0	762	13,755	1,087	12,888	2,534	0	5,682	148,152	2,661	150,833
2005	0	10,889	0	805	14,666	1,159	13,506	2,701	0	8,195	157,028	2,643	159,871
2000	0	11,511	0	851	15,576	1,231	14,346	2,889	0	6,550	166,431	3,007	169,436
2007	0	12,200	0	896	16,504	1,304	15,200	3,040	0	6,957	178,396	3,174	179,570
2008	0	12,929	0	949	17,456	1,379	16,079	3,216	0	7,385	188,955	20,646	207,601
2009	0	14,947	0	1,002	20,228	1,508	16,630	3,726	69	8,552	216,153	21,477	237,630
2010	0	17,100	0	1,654	20,940	1,654	19,288	3,857	73	10,471	248,101	21,984	270,065
2011	0	19,445	0	1,108	21,570	1,794	19,860	3,973	78	12,584	282,649	7,073	269,722
2012	0	20,860	0	1,159	20,559	1,824	18,935	3,767	62	14,208	303,930	0	303,930
2013	0	21,883	0	1,216	20,667	1,633	19,035	3,807	587	14,640	318,570	0	318,570
2014	0	22,937	0	1,274	21,653	1,711	19,951	3,998	19,376	(3,415)	315,155	0	315,155
2015	0	22,691	0	1,261	21,431	1,693	19,738	3,948	21,541	(5,751)	309,404	0	369,494
2016	0	22,277	0	1,238	21,039	1,662	19,377	3,875	35,144	(19,642)	289,762	0	289,782
2017	0	20,863	0	1,159	19,704	1,557	16,147	3,629	76,166	(61,646)	228,114	0	226,114
2018	0	16,424	0	912	15,512	1,225	14,288	2,857	60,070	(68,641)	159,473	0	159,473
2019	0	11,482	0	838	10,544	657	9,967	1,997	73,343	(85,353)	94,120	0	94,120
2020	0	6,777	0	378	6,400	508	5,805	1,179	25,479	(20,763)	73,357	0	73,357
2021	0	5,282	0	293	4,988	364	4,594	919	6,856	(3,183)	70,174	0	70,174
2022	0	5,053	0	281	4,772	377	4,395	879	2,293	1,223	71,397	0	71,397
2023	0	5,141	0	286	4,855	364	4,471	694	2,418	1,160	72,557	0	72,557
2024	0	5,224	0	200	4,984	390	4,544	909	2,550	1,085	73,542	0	73,542
2023	0	5,302	0	295	5,008	398	4,612	922	2,691	999	74,841	0	74,541
2026	0	5,374	0	299	5,076	401	4,675	935	2,839	909	75,541	0	75,541
2027	0	5,439	0	302	5,137	400	4,731	946	2,997	787	76,323	0	76,328
2028	0	5,498	0	305	5,190	410	4,760	956	3,165	859	78,987	0	76,987
2020	0	5,543	0	388	5,235	414	4,822	984	3,343	514	77,501	0	77,501
2030	0	5,580	0	310	5,270	418	4,854	971	3,533	350	77,852	0	77,652
2031	0	5,605	0	311	5,294	418	4,876	975	3,734	166	76,016	0	78,018
2932	0	5,617	0	312	5,305	419	4,666	977	3,948	(39)	77,979	0	77,979
2033	0	5,614	0	312	5,303	419	4,854	977	4,175	(268)	77,710	0	77,710
2034	0	5,595	0	311	5,284	417	4,667	973	4,417	(524)	77,187	0	77,187
2035	0	5,557	0	309	5,249	415	4,834	987	4,675	(807)	76,379	0	78,379
2036	0	5,499	0	396	5,104	410	4,785	957	4,948	(1,122)	75,257	0	75,257
2037	0	5,419	0	301	5,118	404	4,713	043	5,240	(1,470)	73,766	0	73,788
2038	0	5,313	0	295	5,018	395	4,021	924	5,551	(1,854)	71,934	0	71,984
2009	0	5,179	0	238	4,892	388	4,505	901	5,882	(2,278)	69,666	0	69,856
2040	0	5,015	0	279	4,737	374	4,362	872	8,234	(2,744)	66,912	0	66,912
2041	0	4,618	0	286	4,559	359	4,191	836	8,611	(3,258)	83,053	0	63,653
2042	0	4,583	0	255	4,328	342	3,986	797	7,011	(3,622)	59,631	0	59,831
2043	0	4,308	0	238	4,069	321	3,747	749	7,439	(4,441)	55,390	0	55,390
2044	0	3,888	0	222	3,767	298	3,469	694	7,895	(5,120)	50,270	0	50,270
2045	0	3,619	0	201	3,416	270	3,148	630	8,382	(5,863)	44,407	0	44,407
2049	0	3,197	0	178	3,020	239	2,761	556	8,902	(6,677)	37,730	0	37,730
2047	0	2,717	0	151	2,568	203	2,383	473	9,456	(7,566)	30,184	0	30,184
2040	0	2,172	0	121	2,051	162	1,860	376	10,049	(8,538)	21,626	0	21,626
2049	0	1,557	0	87	1,471	116	1,354	271	10,662	(9,599)	12,027	0	12,027
2050	0	888	0	48	616	65	753	151	12,630	(12,027)	0	(0)	(0)
2051	0	(0)	0	0	0	0	0	0	0	(0)	(0)	0	(0)
2052	0	(0)	0	0	0	0	0	0	0	(0)	(0)	0	(0)
2053	0	(0)	0	0	0	0	0	0	0	(0)	(0)	0	0
2054	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2055	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2058	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2057	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2038	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2056	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2050	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
TOTAL	98,111	462,611	0	27,602	400,077	36,716	451,381	90,272	502,568	(96,626)		65,400	

TAX QUALIFIED SP
EXTERNAL FUND
[EQUITIES]

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR	DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND
BEG BAL					1,695				11,834		45,054
1896	379	828	757	71	1,768	1,207	13,041	(7,660)	5,381	9,680	54,734
1907	172	377	1,369	(992)	774	549	5,930	5,345	11,275	17,762	72,495
1908	361	789	469	320	1,094	1,150	12,425	5,143	17,568	19,127	91,622
1909	562	1,230	697	583	1,627	1,792	19,359	4,815	24,174	20,280	111,903
2000	774	1,692	996	697	2,323	2,466	28,640	4,475	31,115	21,486	133,389
2001	996	2,178	1,350	828	3,151	3,174	34,289	4,123	36,412	22,750	156,139
2002	1,229	2,889	1,752	937	4,666	3,916	42,330	3,755	48,085	24,080	160,219
2003	1,475	3,226	2,104	1,032	5,120	4,701	50,765	(2,536)	46,249	10,320	190,539
2004	1,544	3,377	2,728	849	5,789	4,921	53,171	(2,661)	50,489	10,784	201,322
2005	1,616	3,534	2,995	540	6,309	5,150	55,839	(2,943)	52,798	11,345	212,667
2000	1,889	3,896	3,227	469	6,777	5,385	58,182	(3,007)	55,174	11,948	224,613
2007	1,786	3,662	3,437	425	7,203	5,628	60,802	(3,174)	57,626	12,585	237,196
2000	1,844	4,034	3,834	400	7,602	5,876	63,506	(20,646)	42,860	13,263	250,481
2005	1,372	3,000	4,911	(1,911)	5,692	4,372	47,232	(21,477)	25,755	12,924	203,385
2010	824	1,808	4,050	(2,257)	3,485	2,827	28,332	(21,964)	6,416	13,098	276,484
2011	205	449	3,026	(2,576)	858	655	7,073	(7,073)	0	13,239	280,722
2012	0	0	858	(858)	0	0	0	0	0	14,203	303,930
2013	0	0	0	0	0	0	0	0	0	14,640	318,570
2014	0	0	0	0	0	0	0	0	0	(3,415)	315,155
2015	0	0	0	0	0	0	0	0	0	(5,751)	309,484
2018	0	0	0	0	0	0	0	0	0	(19,542)	239,782
2017	0	0	0	0	0	0	0	0	0	(61,846)	226,114
2018	0	0	0	0	0	0	0	0	0	(88,641)	159,473
2019	0	0	0	0	0	0	0	0	0	(85,353)	94,120
2020	0	0	0	0	0	0	0	0	0	(20,703)	73,357
2021	0	0	0	0	0	0	0	0	0	(3,183)	70,174
2022	0	0	0	0	0	0	0	0	0	1,223	71,397
2023	0	0	0	0	0	0	0	0	0	1,160	72,557
2024	0	0	0	0	0	0	0	0	0	1,085	73,842
2025	0	0	0	0	0	0	0	0	0	999	74,841
2020	0	0	0	0	0	0	0	0	0	900	75,541
2027	0	0	0	0	0	0	0	0	0	787	76,328
2023	0	0	0	0	0	0	0	0	0	659	78,987
2029	0	0	0	0	0	0	0	0	0	514	77,501
2030	0	0	0	0	0	0	0	0	0	350	77,852
2031	0	0	0	0	0	0	0	0	0	168	76,018
2032	0	0	0	0	0	0	0	0	0	(39)	77,979
2033	0	0	0	0	0	0	0	0	0	(268)	77,710
2004	0	0	0	0	0	0	0	0	0	(524)	77,167
2035	0	0	0	0	0	0	0	0	0	(807)	76,379
2030	0	0	0	0	0	0	0	0	0	(1,122)	75,257
2037	0	0	0	0	0	0	0	0	0	(1,470)	73,788
2035	0	0	0	0	0	0	0	0	0	(1,654)	71,934
2030	0	0	0	0	0	0	0	0	0	(2,276)	69,856
2040	0	0	0	0	0	0	0	0	0	(2,744)	88,912
2041	0	0	0	0	0	0	0	0	0	(3,258)	83,653
2042	0	0	0	0	0	0	0	0	0	(3,822)	69,831
2043	0	0	0	0	0	0	0	0	0	(4,441)	55,390
2044	0	0	0	0	0	0	0	0	0	(5,120)	50,270
2045	0	0	0	0	0	0	0	0	0	(5,883)	44,407
2045	0	0	0	0	0	0	0	0	0	(8,677)	37,730
2047	0	0	0	0	0	0	0	0	0	(7,566)	30,164
2048	0	0	0	0	0	0	0	0	0	(8,538)	21,626
2048	0	0	0	0	0	0	0	0	0	(9,599)	12,027
2050	0	0	0	0	0	0	0	0	0	(12,027)	0
2051	0	0	0	0	0	0	0	(0)	0	0	0
2052	0	0	0	0	0	0	0	(0)	0	0	0
2053	0	0	0	0	0	0	1	(0)	1	0	1
2054	0	0	0	0	0	0	1	(0)	1	0	1
2055	0	0	0	0	0	0	1	(0)	1	0	1
2056	0	0	0	0	0	0	1	(0)	1	0	1
2057	0	0	0	0	0	0	1	(0)	1	0	1
2058	0	0	0	0	0	0	1	(0)	1	0	1
2059	0	0	0	0	0	0	1	(0)	1	0	1
2000	0	0	0	0	0	0	1	(0)	1	0	1
TOTAL	18,807	36,785	38,480	(1,695)	65,283	53,572		(65,406)		(45,053)	

NONTAX QUALIFIE
EXTERNAL FUND
[FIXED INCOME]

YEAR	ANNUITY PAY	TAX PAY ON INVEST EARN	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE (TOT FUND)	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL										0
1998	1,277	(1,326)	0	0	128	0	(178)	(176)	176	0
1997	1,663	(1,276)	0	0	140	0	247	247	(247)	0
1996	1,563	(1,259)	0	0	155	0	249	249	(249)	0
1999	1,563	(1,298)	0	0	172	0	193	193	(193)	0
2000	1,863	(1,369)	0	0	190	0	103	103	(103)	0
2001	1,563	(1,467)	0	0	210	0	(14)	(14)	14	0
2002	1,663	(1,587)	0	0	232	0	(156)	(158)	156	0
2003	0	(1,731)	0	0	255	0	(1,986)	(1,986)	1,988	0
2004	0	(1,031)	0	0	273	0	(2,293)	(2,203)	2,203	0
2055	0	(2,059)	0	0	292	0	(2,350)	(2,350)	2,550	0
2005	0	(2,195)	0	0	312	0	(2,507)	(2,507)	2,507	0
2067	0	(2,343)	0	0	334	0	(2,677)	(2,677)	2,877	0
2008	0	(2,503)	0	0	357	0	(2,860)	(2,860)	2,860	0
2009	0	(2,878)	0	0	382	28	(3,888)	(3,086)	3,086	0
2010	0	(2,862)	0	0	409	29	(3,300)	(3,300)	3,309	0
2011	0	(3,081)	0	0	437	31	(3,520)	(3,529)	18,808	15,279
2012	0	(3,834)	0	825	468	33	(3,310)	11,989	28,450	38,419
2013	0	(3,808)	0	2,075	468	235	(2,264)	38,155	26,961	63,116
2014	0	(3,178)	0	3,408	522	7,750	(6,042)	55,073	29,781	84,854
2015	0	(2,734)	0	4,582	517	6,616	(7,286)	77,569	27,181	104,750
2018	0	(2,030)	0	5,858	506	14,058	(10,937)	93,813	24,021	117,864
2017	0	(1,313)	0	6,363	471	30,486	(25,988)	91,948	0	91,948
2018	0	(107)	0	4,965	388	32,028	(27,538)	54,408	0	64,408
2019	0	(75)	0	3,478	258	29,337	(26,192)	38,216	0	38,216
2020	0	(45)	0	2,054	153	10,191	(8,325)	29,891	0	29,891
2021	0	(35)	0	1,614	120	2,743	(1,264)	28,607	0	28,607
2022	0	(33)	0	1,545	114	917	486	29,087	0	29,087
2023	0	(34)	0	1,571	118	987	453	29,540	0	29,540
2024	0	(34)	0	1,595	118	1,020	422	29,963	0	29,963
2025	0	(35)	0	1,616	120	1,076	387	30,350	0	30,350
2026	0	(35)	0	1,639	121	1,138	346	30,696	0	30,696
2027	0	(39)	0	1,858	123	1,199	300	30,996	0	30,996
2029	0	(39)	0	1,674	124	1,266	248	31,244	0	31,244
2029	0	(36)	0	1,667	125	1,337	188	31,432	0	31,432
2030	0	(37)	0	1,697	126	1,413	122	31,554	0	31,554
2031	0	(37)	0	1,704	120	1,494	47	31,601	0	31,601
2032	0	(37)	0	1,703	120	1,579	(36)	31,565	0	31,585
2033	0	(37)	0	1,705	126	1,670	(129)	31,438	0	31,438
2034	0	(37)	0	1,696	126	1,767	(232)	31,264	0	31,204
2033	0	(36)	0	1,065	125	1,870	(346)	30,856	0	30,856
2030	0	(36)	0	1,668	123	1,979	(473)	30,396	0	39,388
2037	0	(35)	0	1,641	122	2,098	(612)	29,774	0	29,774
2038	0	(36)	0	1,696	119	2,220	(766)	29,007	0	29,097
2030	0	(34)	0	1,508	118	2,353	(936)	26,071	0	26,071
2040	0	(33)	0	1,516	112	2,494	(1,123)	26,948	0	26,948
2041	0	(31)	0	1,485	108	2,544	(1,328)	25,820	0	25,620
2042	0	(39)	0	1,363	102	2,805	(1,553)	24,086	0	24,666
2043	0	(28)	0	1,390	98	2,978	(1,860)	22,266	0	22,266
2044	0	(26)	0	1,202	69	3,158	(2,071)	20,195	0	20,195
2043	0	(24)	0	1,091	81	3,353	(2,367)	17,628	0	17,828
2045	0	(21)	0	983	71	3,561	(2,690)	15,138	0	15,138
2047	0	(18)	0	617	61	3,783	(3,043)	12,095	0	12,095
2049	0	(14)	0	653	46	4,020	(3,429)	8,668	0	8,666
2049	0	(10)	0	408	35	4,273	(3,860)	4,616	0	4,616
2050	0	(6)	0	266	19	5,052	(4,817)	(0)	0	0
2051	0	0	0	0	(0)	0	0	0	(0)	0
2052	0	0	0	0	(0)	0	0	0	(0)	0
2053	0	0	0	0	(0)	0	0	0	(0)	0
2054	0	0	0	0	(0)	0	0	0	(0)	0
2055	0	0	0	0	(0)	0	0	0	(0)	0
2050	0	0	0	0	(0)	0	0	0	(0)	0
2057	0	0	0	0	(0)	0	0	0	(0)	0
2058	0	0	0	0	(0)	0	0	0	(0)	0
2059	0	0	0	0	(0)	0	0	0	(0)	0
2000	0	0	0	0	(0)	0	0	0	(0)	0
TOTAL	11,255	(48,582)	0	75,601	11,176	201,023	(173,726)		173,726	

NONTAX QUALIFI
EXTERNAL FUND
: [EQUITIES]

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR	DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND	TOTAL QUAL AND NONQUAL FUNDS
BEG BAL					7,878				31,919		31,919	76,973
1995	1,021	2,234	3,033	(799)	7,077	3,258	35,175	(178)	34,998	3,079	34,098	69,732
1907	1,120	2,450	2,663	(483)	6,644	3,570	38,568	247	36,815	3,817	38,815	111,310
1999	1,242	2,717	2,808	(91)	8,553	3,959	42,774	249	43,023	4,203	43,023	134,645
1999	1,377	3,012	2,860	142	6,695	4,388	47,411	193	47,604	4,581	47,604	159,507
2060	1,523	3,332	3,058	324	7,019	4,858	52,460	103	52,563	4,959	52,583	185,952
2061	1,682	3,879	3,210	470	7,469	5,381	57,925	(14)	57,911	5,347	57,911	214,050
2002	1,653	4,054	3,484	390	6,079	5,907	83,818	(156)	83,662	5,751	83,862	243,681
2003	2,037	4,456	3,774	662	6,761	6,404	70,155	(1,986)	66,170	4,508	66,170	258,708
2034	2,181	4,772	4,233	539	9,299	6,953	75,123	(2,203)	72,919	4,750	72,919	274,242
2005	2,333	5,104	4,512	592	9,892	7,438	80,357	(2,350)	78,007	5,087	78,007	290,874
2005	2,498	5,460	4,608	652	10,544	7,957	85,964	(2,507)	83,457	5,450	83,457	308,070
2067	2,871	5,642	5,131	711	11,255	8,513	91,969	(2,677)	89,293	5,839	89,293	326,491
2008	2,857	8,250	5,481	770	12,024	9,108	98,401	(2,860)	95,540	6,248	95,540	346,001
2009	3,057	8,086	5,858	829	12,854	9,745	105,265	(3,986)	102,200	8,659	102,206	365,565
2010	3,270	7,154	6,266	888	13,742	10,424	112,624	(3,300)	109,324	7,124	100,324	365,807
2011	3,496	7,653	6,700	952	14,694	11,151	120,475	(18,808)	101,667	7,622	116,048	496,666
2012	3,253	7,117	8,149	(1,032)	13,862	10,370	112,037	(28,450)	85,587	7,060	124,000	427,938
2013	2,739	5,991	8,154	(2,163)	11,499	8,730	94,317	(26,961)	67,356	6,466	130,472	449,042
2014	2,155	4,715	7,185	(2,450)	9,949	6,870	74,227	(29,781)	44,448	(1,172)	129,390	444,455
2015	1,422	3,111	6,198	(3,076)	5,971	4,533	43,979	(27,161)	21,798	(2,752)	126,548	435,952
2016	696	1,526	4,506	(3,043)	2,928	2,223	24,021	(24,021)	0	(8,714)	117,834	407,586
2017	0	0	2,928	(2,928)	0	0	0	0	0	(25,988)	91,946	320,050
2016	0	0	0	0	0	0	0	0	0	(27,538)	84,408	223,681
2819	0	0	0	0	0	0	0	0	0	(26,192)	38,216	132,336
2020	0	0	0	0	0	0	0	0	0	(6,325)	20,891	103,243
2021	0	0	0	0	0	0	0	0	0	(1,284)	26,607	98,762
2022	0	0	0	0	0	0	0	0	0	468	29,087	100,484
2023	0	0	0	0	0	0	0	0	0	453	29,540	102,097
2024	0	0	0	0	0	0	0	0	0	422	20,963	103,605
2025	0	0	0	0	0	0	0	0	0	387	30,359	104,900
2026	0	0	0	0	0	0	0	0	0	346	30,696	108,237
2027	0	0	0	0	0	0	0	0	0	300	30,998	107,324
2020	0	0	0	0	0	0	0	0	0	246	31,244	108,231
2020	0	0	0	0	0	0	0	0	0	188	31,432	108,933
2030	0	0	0	0	0	0	0	0	0	122	31,554	109,405
2931	0	0	0	0	0	0	0	0	0	47	31,601	109,619
2032	0	0	0	0	0	0	0	0	0	(35)	31,565	109,544
2033	0	0	0	0	0	0	0	0	0	(129)	31,436	100,147
2034	0	0	0	0	0	0	0	0	0	(232)	31,204	108,391
2035	0	0	0	0	0	0	0	0	0	(346)	30,858	107,237
2030	0	0	0	0	0	0	0	0	0	(473)	30,388	105,043
2037	0	0	0	0	0	0	0	0	0	(612)	29,774	103,661
2038	0	0	0	0	0	0	0	0	0	(786)	29,007	100,941
2038	0	0	0	0	0	0	0	0	0	(936)	28,071	97,727
2049	0	0	0	0	0	0	0	0	0	(1,123)	26,048	93,860
2041	0	0	0	0	0	0	0	0	0	(1,328)	25,020	69,273
2042	0	0	0	0	0	0	0	0	0	(1,553)	24,086	63,697
2045	0	0	0	0	0	0	0	0	0	(1,800)	22,266	77,856
2044	0	0	0	0	0	0	0	0	0	(2,071)	20,195	70,465
2049	0	0	0	0	0	0	0	0	0	(2,367)	17,628	62,235
2040	0	0	0	0	0	0	0	0	0	(2,690)	15,136	52,889
2047	0	0	0	0	0	0	0	0	0	(3,043)	12,095	42,259
2048	0	0	0	0	0	0	0	0	0	(3,429)	8,888	30,292
2048	0	0	0	0	0	0	0	0	0	(3,850)	4,818	16,844
2050	0	0	0	0	0	0	0	(0)	(0)	(4,817)	(0)	(0)
2051	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)
2052	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)
2053	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2054	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2050	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2050	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2057	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2050	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2059	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
2050	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
TOTAL	44,468	97,316	105,194	(7,876)	203,695	141,808		(173,726)		(31,920)		

Calculation of Revenue Requirements Related to Nonqualified Fund — 02/14/96

CAPITAL COST	COST	% OF CAP		YEAR	BOOK INCOME EFFECTS: DEP NON QUAL ANN	DEP NQ RETAIN EARN	FED TAX SAV DEPR	STATE TAX SAV DEPR	FED AND STATE TAX BENEFIT OF DEC EXPEND	FEDERAL TAX EXEMPT INVEST EARN (TAX FOR STAT	DIV INCOME (SUBJECT FED & STATE DIVIDEND EXCLUSION)	TAX ABLE INVEST EARN (REAL CAP GAIN+ADMIN +TAX INT)	UNREALIZED CAP GAIN	CURRENT STATE TAX (NET OF FED BEN)	CURRENT FED TAX	DEFERRED FED & STATE TAXES ON UNREAL CAP GAIN
COMMON EQUITY	12.00%	52.00%	****													
PREFERRED	7.25%	6.00%	****													
DEBT	7.79%	42.00%	****	PRIOR YRS			12,619	1,816								(3,161)
				1996	(1,277)	(1,802)	1,078	158	0	0	1,021	2,905	(799)	(202)	(1,124)	321
				1997	(1,863)	(2,154)	1,336	196	0	0	1,120	2,743	(433)	(198)	(1,078)	174
BEFORE TAX COST		14.42%		1998	(1,863)	(2,545)	1,473	216	0	0	1,242	2,653	(91)	(200)	(1,059)	37
WEIGHTED COST		9.95%		1999	(1,663)	(2,918)	1,603	235	0	0	1,377	2,697	142	(209)	(1,089)	(57)
AFTER TAX COST		6.63%		2000	(1,663)	(3,296)	1,736	255	0	0	1,523	2,616	324	(223)	(1,146)	(130)
				2001	(1,863)	(3,684)	1,872	275	0	0	1,682	2,999	470	(240)	(1,226)	(189)
CUSTOMER DISCOUNT RATE		10.00%	****	2002	(1,653)	(4,088)	2,013	295	0	0	1,853	3,232	590	(261)	(1,326)	(237)
				2003	0	(4,508)	1,578	231	0	0	2,037	3,520	882	(285)	(1,446)	(274)
				2004	0	(4,750)	1,682	244	0	0	2,181	3,981	539	(315)	(1,615)	(216)
				2005	0	(5,087)	1,781	261	0	0	2,333	4,220	592	(337)	(1,722)	(238)
				2006	0	(5,450)	1,907	280	0	0	2,496	4,496	652	(359)	(1,836)	(262)
				2007	0	(5,836)	2,043	300	0	0	2,671	4,797	711	(383)	(1,959)	(285)
				2008	0	(6,248)	2,187	321	0	0	2,857	5,124	770	(410)	(2,093)	(309)
1,268,740				2008	0	(6,667)	2,331	342	11	0	3,057	5,476	829	(438)	(2,238)	(333)
				2010	0	(7,153)	2,493	368	12	0	3,270	5,857	888	(469)	(2,393)	(356)
				2011	0	(7,653)	2,888	391	12	0	3,496	6,288	952	(501)	(2,559)	(382)
				2012	0	(7,093)	2,471	363	13	825	3,253	7,681	(1,032)	(604)	(3,030)	414
DEFERRED TAX ACCOUNTING				2013	0	(8,700)	2,263	332	94	2,075	2,739	7,658	(2,163)	(640)	(2,968)	658
				2014	0	(6,578)	(423)	(62)	3,111	3,408	2,155	6,843	(2,450)	(627)	(2,552)	983
FEDERAL (1=YES,0=NO)		1	****	2015	0	(5,864)	(994)	(145)	3,458	4,582	1,422	5,672	(3,078)	(600)	(2,135)	1,235
STATE (1=YES,0=NO)		1	****	2016	0	(5,344)	(3,147)	(459)	5,642	5,858	698	4,082	(3,043)	(535)	(1,495)	1,221
				2017	0	(4,579)	(9,348)	(1,365)	12,228	8,383	0	2,457	(2,928)	(453)	(860)	1,175
OPEN BAL - FED DEP		12,819	****	2016	0	(4,450)	(9,944)	(1,451)	12,854	4,985	0	(383)	0	(236)	129	0
OPEN BAL - STATE DEP		1,618	****	2019	0	(3,145)	(9,458)	(1,381)	11,774	3,476	0	(258)	0	(165)	90	0
				2020	0	(1,566)	(3,006)	(439)	4,090	2,064	0	(153)	0	(98)	54	0
OPEN BAL - FED&STATE				2021	0	(1,460)	(484)	(68)	1,101	1,614	0	(120)	0	(77)	42	0
UNREALIZED GAIN		(3,161)	****	2022	0	(1,397)	168	25	368	1,545	0	(114)	0	(73)	40	0
				2023	0	(1,420)	159	23	368	1,571	0	(116)	0	(75)	41	0
				2024	0	(1,443)	148	22	409	1,595	0	(118)	0	(76)	41	0
				2025	0	(1,460)	135	20	432	1,618	0	(120)	0	(77)	42	0
				2026	0	(1,482)	121	18	458	1,639	0	(121)	0	(78)	42	0
				2027	0	(1,499)	105	15	481	1,658	0	(123)	0	(79)	43	0
				2026	0	(1,514)	87	13	508	1,674	0	(124)	0	(80)	43	0
				2028	0	(1,526)	66	10	537	1,687	0	(125)	0	(50)	44	0
				2030	0	(1,535)	43	6	587	1,697	0	(126)	0	(61)	44	0
				2031	0	(1,541)	17	2	599	1,704	0	(126)	0	(81)	44	0
				2832	0	(1,543)	(13)	(2)	634	1,706	0	(126)	0	(61)	44	0
				2033	0	(1,541)	(46)	(7)	670	1,705	0	(126)	0	(61)	44	0
				2034	0	(1,535)	(83)	(12)	709	1,698	0	(126)	0	(61)	44	0
				2035	0	(1,524)	(125)	(16)	750	1,685	0	(125)	0	(80)	44	0
				2036	0	(1,507)	(170)	(25)	794	1,666	0	(123)	0	(79)	43	0
				2037	0	(1,484)	(220)	(32)	641	1,641	0	(122)	0	(78)	43	0
				2038	0	(1,454)	(276)	(40)	891	1,608	0	(119)	0	(76)	42	0
				2039	0	(1,418)	(337)	(49)	944	1,566	0	(116)	0	(74)	41	0
				2040	0	(1,371)	(404)	(59)	1,001	1,516	0	(112)	0	(72)	39	0
				2941	0	(1,316)	(478)	(70)	1,061	1,455	0	(108)	0	(69)	38	0
				2042	0	(1,251)	(359)	(62)	1,126	1,383	0	(102)	0	(65)	36	0
				2043	0	(1,175)	(648)	(95)	1,194	1,300	0	(96)	0	(62)	34	0
				2044	0	(1,887)	(748)	(109)	1,267	1,202	0	(89)	0	(57)	31	0
				2045	0	(986)	(852)	(124)	1,346	1,091	0	(81)	0	(62)	28	0
				2048	0	(871)	(969)	(141)	1,429	983	0	(71)	0	(46)	25	0
				2047	0	(739)	(1,006)	(160)	1,518	817	0	(61)	0	(39)	21	0
				2048	0	(501)	(1,235)	(180)	1,613	853	0	(46)	0	(31)	17	0
				2048	0	(423)	(1,386)	(202)	1,715	468	0	(35)	0	(22)	12	0
				2050	0	(236)	(1,734)	(253)	2,028	260	0	(19)	0	(12)	7	0
				2051	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2052	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2953	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2054	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2035	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2036	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2057	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2058	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2039	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				2050	0	0	(0)	(0)	0	0	(0)	(0)	(0)	0	0	0
				TOTAL	(11,255)	(157,849)	(0)	(0)	80,681	75,801	44,466	94,018	(7,676)	(11,005)	(37,576)	0

NET INCOME IMPACT	REV REQ IMPACT	CAPITAL IMPACTS: TOT FED/STATE DEFERRED TAX BALANCES	CAPITAL IMPACTS: REV REQ IMPACT	TOTAL NQ REV REQ IMPACT	TOTAL DECOMM REV REQ IMPACT	NPV OF TOT REV REQ
		11,275				
279	(467)	12,531	1,626	1,159	8,301	7,471
43	(71)	14,537	1,850	1,779	18,940	21,547
62	(104)	16,262	2,996	1,992	17,153	34,434
119	(198)	18,044	2,345	2,147	17,308	48,250
197	(330)	19,904	2,602	2,272	17,434	57,981
205	(492)	21,862	2,670	2,378	17,540	68,982
409	(683)	23,933	3,152	2,470	17,831	78,026
1,535	(2,566)	25,469	3,451	888	888	76,443
1,690	(2,823)	27,159	3,673	849	649	76,808
1,804	(3,014)	28,963	3,916	963	903	77,151
1,925	(3,216)	39,888	4,177	960	860	77,483
2,057	(3,436)	32,945	4,454	1,018	1,018	77,612
2,199	(3,673)	35,144	4,751	1,078	1,076	76,124
2,351	(3,927)	37,494	5,058	1,141	1,141	78,425
2,515	(4,201)	39,987	5,408	1,205	1,205	78,713
2,889	(4,492)	42,654	5,756	1,274	1,274	78,990
3,261	(5,448)	45,912	6,152	704	704	79,130
3,557	(5,942)	49,375	6,621	679	879	79,252
3,609	(6,029)	49,673	7,120	1,091	1,091	79,430
3,555	(5,938)	49,970	7,192	1,254	1,284	79,617
3,257	(5,441)	47,565	7,206	1,765	1,765	79,855
2,891	(4,494)	36,048	6,862	2,387	2,367	60,146
1,459	(2,437)	20,652	5,467	3,040	3,049	80,466
933	(1,594)	15,614	3,845	2,289	2,289	60,718
845	(1,078)	12,369	2,280	1,202	1,202	60,829
570	(952)	11,638	1,784	832	832	60,899
581	(937)	12,030	1,707	770	770	60,957
570	(952)	12,212	1,735	783	783	61,012
579	(967)	12,382	1,761	794	704	61,062
587	(961)	12,537	1,785	805	805	61,108
595	(994)	12,676	1,808	614	814	61,150
692	(1,005)	12,797	1,628	823	823	61,169
607	(1,015)	12,696	1,845	831	831	61,225
612	(1,023)	12,972	1,860	837	837	61,253
616	(1,029)	13,020	1,671	641	641	81,268
618	(1,033)	13,039	1,876	645	845	61,315
619	(1,034)	13,025	1,860	849	846	61,340
617	(1,031)	12,971	1,876	847	647	61,362
614	(1,025)	12,676	1,870	846	846	81,363
808	(1,015)	12,733	1,657	642	642	61,402
599	(1,001)	12,538	1,836	835	835	81,416
589	(983)	12,285	1,808	625	825	61,433
575	(960)	11,969	1,772	611	811	81,447
555	(932)	11,583	1,728	794	794	61,459
537	(898)	11,119	1,670	772	772	61,469
513	(857)	10,571	1,603	748	748	61,479
495	(809)	9,030	1,524	715	715	81,487
451	(754)	9,187	1,432	678	678	61,494
413	(690)	6,333	1,325	835	835	81,508
389	(617)	7,356	1,202	585	565	61,505
319	(533)	6,247	1,081	526	528	61,509
262	(438)	4,991	901	462	462	61,512
198	(331)	3,576	720	368	368	81,515
126	(211)	1,987	516	304	304	61,516
40	(67)	(0)	287	220	220	61,516
(0)	0	(0)	(0)	(0)	(0)	81,518
(0)	0	(0)	(0)	(0)	(0)	61,518
(0)	0	(0)	(0)	(0)	(0)	81,518
(0)	0	(0)	(0)	(0)	(0)	61,518
(0)	0	(0)	(0)	(0)	(0)	81,518
(0)	0	(0)	(0)	(0)	(0)	81,518
(0)	0	(0)	(0)	(0)	(0)	61,518
(0)	0	(0)	(0)	(0)	(0)	81,518
(0)	0	(0)	(0)	(0)	(0)	61,518
(0)	0	(0)	(0)	(0)	(0)	81,518
55,151	(97,137)		156,602	59,555	157,888	

Schedule C

Aeeelerate to 2002

with

Tax Restriction

DECOMMISSIONING ANALYSIS FOR 1992 PSCW DEPRECIATION STUDY

02/14/96

ASSUMPTIONS

STARTING YEAR FOR ANALYSIS	1996	****	
LAST PAYMENT TO FUND (END OF YEAR)	2002	****	
REMAINING NUMBER OF PAYMENTS	7		
FIRST PAYMENT FOR DECOMMISSION (END OF YEAR)	2008		
YEAR LICENSE EXPIRES	2013		
YEARS TO END OF LICENSE	18		
NO. OF YEARS FROM 1/1/74 - 12/31/08	35	****	
NO. OF YEARS FROM 1/1/84 - 12/31/08	16.3	****	
% OF COST ELIGIBLE FOR TAX QUALIFIED FUND	46.5651%		
FUTURE COST OF DECOMMISSIONING	703,581		
FUTURE COST ELIGIBLE FOR TAX QUALIFIED FUND	327,623		
FUTURE COST NOT ELIG FOR TAX QUALIFIED FUND	375,958		
PRIOR PAYMENTS TO QUAL FUND	45,054	****	
PRIOR INVEST EARN IN QUAL FUND	0	****	
BEGINNING BALANCE IN TAX QUALIFIED FUND	45,054		
TOTAL BEGIN BALANCE IN NON TAX QUAL FUND	31,919	****	

CALCULATIONS

ORDER OF DECOMM EXPENDITURES - (1=QUAL FIRST, 2=NONQUAL FIRST, 3=PRORATA)	3.00	3.00	****
EQUIT HELD - (1=Q 1st, 2=NQ 1st)	2.00	2.00	****
NONQUAL TAXES WITHDRAWN FROM FUND (1=YES, 2=NO)	1.00	1.00	****
ANNUAL PAYMENT - QUALIFIED FUND		7,142	
ANNUAL PAY - NON QUALIFIED FUND		10,130	
0 QUAL			
(0) NQUAL			
91,780 DISPVRR			
6,301 1ST YEAR RR			

***** - Indicates this is an inputted assumption.
^^^^ - Indicates this is input coming in through a file link.

FED TAX RATE (ON INVEST RETURNS)	35.0000%	****
STATE STATUTORY TAX RATE (ON INVEST RETURNS)	7.9000%	****
STATE EFFECTIVE TAX RATE	5.1350%	
FEDERAL DIVIDEND EXCLUSION (CORP)	70.00%	****
STATE DIVIDEND EXCLUSION (CORP)	0.00%	****

QUALIFIED FUND

EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****
EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****
EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%	
EXPECTED ANNUAL CAPITAL GAIN REALIZATION % (% APPLIED TO CURRENT YEAR AND BEGINNING OF YEAR CUMMULATIVE UNREALIZED GAIN)	30.00%	****

NONQUALIFIED FUND

EXPECTED DIVIDEND COMPONENT OF EQUITY RET	3.20%	****
EXPECTED CAPITAL GAIN COMPONENT OF EQUITY RET	7.00%	****
EXPECTED PRE-TAX EQUITY TOTAL RETURN	10.20%	
EXPECTED ANNUAL CAPITAL GAIN REALIZATION % (% APPLIED TO CURRENT YEAR AND BEGINNING OF YEAR CUMMULATIVE UNREALIZED GAIN)	30.00%	****
EXPECTED TAXABLE FIXED INCOME RETURN	7.20%	****
EXPECTED FEDERAL TAX EXEMPT FIXED INCOME RET	5.40%	****
EXPECTED ADMIN EXPENSE	0.4000%	****
BEGINNING BAL QUAL EQUITIES	11,834	****
BEGINNING BAL QUAL FIXED INCOME	33,220	****
TOTAL BEGINNING BALANCE QUAL FUND	45,054	
BEGINNING BAL QUAL FUND UNREALIZED GAINS	1,695	****
BEGINNING BAL NONQUAL EQUITIES	31,919	****
BEGINNING BAL NONQUAL FIXED INCOME	0	****
TOTAL BEGINNING BALANCE NONQUAL FUND	31,919	
BEGINNING BAL NONQUAL FUND UNREALIZED GAINS	7,676	****

	TOTAL PORT SPLIT		QUAL PORT SPLIT			
YEAR	% OF TOTAL POR EQUITIES ****	% OF TOTAL POR FIXED INC	% OF QUAL POR EQUITIES	% OF QUAL POR FIXED INC	% OF QUAL FIX IN POR TAX FIX IN ****	% OF QUAL FIX IN POR TE FIX INC
1996	45.00%	55.00%	9.83%	90.17%	180.00%	0.00%
1997	45.00%	55.00%	4.67%	95.33%	100.00%	0.00%
1998	45.00%	55.00%	0.39%	99.61%	180.00%	0.00%
1999	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2000	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2001	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2002	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2003	45.00%	55.00%	0.00%	100.00%	180.00%	0.00%
2004	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2003	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2006	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2007	45.00%	55.00%	0.00%	100.00%	100.00%	0.00%
2000	40.00%	90.00%	0.00%	100.00%	100.00%	0.00%
2000	35.00%	65.00%	0.00%	100.00%	100.00%	0.00%
2010	30.00%	70.00%	0.00%	100.00%	100.00%	0.00%
2011	25.00%	75.00%	0.00%	100.00%	100.00%	0.00%
2012	20.00%	80.00%	0.00%	100.00%	100.00%	0.00%
2013	15.00%	85.00%	0.00%	100.00%	100.00%	0.00%
2014	10.00%	90.00%	0.00%	100.00%	100.00%	0.00%
2015	5.00%	95.00%	0.00%	100.00%	100.00%	0.00%
2016	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2017	0.00%	180.00%	0.00%	100.00%	100.00%	0.00%
2016	0.00%	180.00%	0.00%	100.00%	100.00%	0.00%
2019	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2020	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2021	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2022	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2023	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2024	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2025	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2026	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2027	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2026	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2029	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2030	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2031	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2032	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2003	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2034	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2035	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2036	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2037	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2038	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2039	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2040	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2041	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2042	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2043	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2044	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2045	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2046	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2047	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2048	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2046	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%
2050	0.00%	100.00%	90.97%	0.03%	100.00%	0.00%
2051	0.00%	100.00%	100.06%	-0.06%	180.00%	0.00%
2052	0.00%	100.00%	100.00%	0.00%	100.00%	0.00%
2053	0.00%	100.00%	99.83%	0.17%	100.00%	0.00%
2054	0.00%	100.00%	99.60%	0.40%	100.00%	0.00%
2055	0.00%	100.00%	99.33%	0.67%	100.00%	0.00%
2006	0.00%	100.00%	99.03%	0.97%	100.00%	0.00%
2057	0.00%	100.00%	98.72%	1.28%	100.00%	0.00%
2058	0.00%	100.00%	98.39%	1.61%	100.00%	0.00%
2059	0.00%	100.00%	98.06%	1.94%	100.00%	0.00%
2000	0.00%	100.00%	97.73%	2.27%	100.00%	0.00%

NONQUAL PORT S

% OF NQUAL PORT EQUITIES	% OF NQUAL PORT FIXED INC	% OF NQUAL FIX IN PORT TAX FIX INC ****	% OF NQUAL FIX IN PORT TE FIX INC	QUAL FED TAX RATE ****	QUAL STATE STAT TAX RATE ****
100.00%	0.00%	0.00%	100.00%	20.00%	7.60%
100.00%	0.00%	0.00%	100.00%	20.00%	7.00%
100.60%	0.00%	0.00%	100.00%	20.00%	7.90%
98.23%	3.77%	0.00%	100.06%	20.00%	7.90%
93.11%	6.89%	0.00%	190.00%	20.00%	7.90%
90.60%	9.31%	0.00%	100.00%	20.00%	7.90%
88.74%	11.26%	0.00%	100.00%	20.00%	7.90%
87.91%	12.09%	0.00%	100.00%	20.00%	7.90%
87.19%	12.61%	0.00%	100.00%	20.00%	7.90%
86.51%	13.49%	0.00%	100.00%	20.00%	7.90%
85.84%	14.16%	0.00%	100.00%	20.00%	7.90%
85.20%	14.89%	0.00%	100.00%	20.00%	7.90%
75.16%	24.62%	0.00%	100.00%	20.00%	7.90%
65.51%	34.46%	0.00%	100.00%	20.00%	7.00%
55.90%	44.04%	0.00%	100.00%	20.00%	7.90%
46.53%	53.47%	0.00%	100.00%	20.00%	7.90%
37.16%	62.84%	0.00%	100.00%	20.00%	7.90%
27.85%	72.15%	0.00%	100.00%	20.00%	7.90%
18.56%	81.44%	0.00%	100.00%	20.00%	7.90%
9.20%	99.71%	0.00%	100.90%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.60%	20.00%	7.90%
0.00%	100.09%	0.00%	100.90%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.60%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	100.90%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.90%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	160.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.60%
0.00%	100.00%	0.00%	100.00%	20.00%	7.00%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.90%	100.90%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.90%	0.00%	100.90%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.90%
0.90%	100.90%	0.00%	100.00%	20.00%	7.90%
0.00%	100.00%	0.00%	100.00%	20.06%	7.90%
0.06%	100.90%	0.00%	100.00%	20.00%	7.90%
0.00%	100.09%	0.00%	100.00%	20.00%	7.00%
0.00%	100.00%	0.00%	100.00%	20.00%	7.60%
0.90%	100.09%	0.00%	100.00%	20.06%	7.60%
0.00%	100.90%	0.00%	100.00%	20.00%	7.60%
0.90%	100.09%	0.00%	100.00%	20.00%	7.90%
0.00%	100.90%	0.90%	100.00%	20.00%	7.90%
100.90%	0.00%	0.00%	100.00%	20.03%	7.90%
100.00%	0.09%	0.00%	100.00%	20.06%	7.90%
100.00%	0.09%	0.00%	109.00%	20.00%	7.90%
100.00%	0.90%	0.00%	100.60%	20.00%	7.90%
100.90%	0.09%	0.60%	109.00%	20.60%	7.60%
100.90%	0.09%	0.00%	100.00%	20.90%	7.90%
100.00%	0.09%	0.90%	100.90%	20.00%	7.90%
100.00%	0.00%	0.00%	100.90%	20.00%	7.90%
100.00%	0.09%	0.00%	100.00%	20.00%	7.00%
100.00%	0.90%	0.00%	100.00%	20.06%	7.90%
100.00%	0.09%	0.00%	100.00%	20.00%	7.60%

DECOMMISSIONING EXPENDITURE

YEAR	AMOUNT ****	FROM QUALIFIED	TOTAL FROM NON QUAL
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	0	0	0
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	97	45	52
2010	102	48	55
2011	109	51	58
2012	115	54	62
2013	822	383	439
2014	27,127	12,632	14,495
2015	30,158	14,043	16,115
2016	49,202	22,911	26,291
2017	106,633	49,654	56,979
2018	112,098	52,199	59,899
2019	102,680	47,813	54,867
2020	35,670	16,610	19,060
2021	9,601	4,471	5,130
2022	3,210	1,495	1,715
2023	3,385	1,576	1,809
2024	3,570	1,663	1,908
2025	3,767	1,754	2,013
2026	3,975	1,851	2,124
2027	4,198	1,954	2,242
2028	4,431	2,063	2,368
2029	4,681	2,180	2,501
2030	4,946	2,303	2,643
2031	5,228	2,434	2,793
2032	5,527	2,574	2,953
2033	5,846	2,722	3,124
2034	6,184	2,880	3,305
2035	6,545	3,047	3,497
2036	6,926	3,226	3,702
2037	7,336	3,416	3,920
2038	7,771	3,619	4,152
2039	8,235	3,835	4,400
2040	6,726	4,064	4,664
2041	9,255	4,310	4,945
2042	9,816	4,571	5,245
2043	10,415	4,850	5,565
2044	11,053	5,147	5,908
2045	11,735	5,464	6,270
2046	12,462	5,803	6,659
2047	13,239	6,165	7,074
2048	14,069	6,551	7,518
2049	14,955	6,964	7,991
2050	17,881	8,233	9,448
2051	0	0	0
2052	0	0	0
2053	0	0	0
2034	0	0	0
2055	0	0	0
2058	0	0	0
2057	0	0	0
2058	0	0	0
2059	0	0.00	0
2050	0	0	0
TOTAL	703,581	327,823	375,958

TAX QUALIFIED
EXTERNAL FUND
[FIXED INCOME]

YEAR	PAYMENT	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE	STATE TAX INCOME	STATE TAXES	FED TAX INCOME	FED TAXES	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL													33,220
1998	7,142	2,392	0	180	3,347	264	3,083	617	0	8,473	41,693	7,660	49,353
1997	7,142	3,553	0	219	4,676	385	4,491	998	0	9,193	58,545	2,921	61,467
1998	7,142	4,426	0	258	4,626	381	4,445	889	0	10,039	71,506	3,024	74,530
1999	7,142	5,366	0	299	5,479	433	5,046	1,009	0	10,787	85,297	322	85,619
2000	7,142	6,165	0	342	5,882	483	5,399	1,060	0	11,421	97,040	0	97,040
2001	7,142	6,987	0	366	6,599	521	6,077	1,215	0	12,004	109,044	0	109,044
2002	7,142	7,851	0	438	7,415	586	6,829	1,366	0	12,605	121,549	0	121,849
2003	0	6,759	0	487	6,272	653	7,619	1,524	0	6,095	127,744	0	127,744
2004	0	9,198	0	511	6,887	880	8,009	1,880	0	6,400	134,144	0	134,144
2005	0	9,658	0	537	9,122	721	8,491	1,880	0	6,721	140,865	0	140,865
2005	0	10,142	0	563	9,579	757	6,822	1,784	0	7,658	147,923	0	147,923
2007	0	10,850	0	592	10,059	795	9,264	1,853	0	7,411	155,334	0	155,334
2000	0	11,184	0	621	10,563	834	9,726	1,946	0	7,783	163,117	0	163,117
2009	0	11,744	0	652	11,092	876	10,216	2,043	45	8,127	171,244	0	171,244
2010	0	12,330	0	685	11,945	920	10,725	2,145	48	8,532	179,776	0	179,776
2011	0	12,944	0	719	12,225	966	11,259	2,252	51	6,957	186,733	0	188,733
2012	0	13,589	0	755	12,834	1,014	11,620	2,364	54	9,402	198,135	0	198,135
2013	0	14,266	0	793	13,473	1,054	12,409	2,482	383	9,544	207,680	0	207,660
2014	0	14,953	0	831	14,122	1,116	13,007	2,601	12,632	(2,226)	205,453	0	205,453
2015	0	14,793	0	622	13,971	1,104	12,887	2,573	14,043	(3,749)	201,704	0	201,704
2016	0	14,523	0	607	13,716	1,064	12,632	2,526	22,911	(12,805)	188,899	0	186,899
2017	0	13,601	0	756	12,845	1,015	11,830	2,366	49,654	(40,189)	148,710	0	148,710
2018	0	10,707	0	595	10,112	799	9,313	1,863	52,199	(44,748)	103,962	0	103,962
2019	0	7,485	0	416	7,059	553	6,511	1,302	47,613	(42,664)	61,358	0	61,358
2020	0	4,416	0	245	4,172	330	3,843	769	16,610	(13,536)	47,822	0	47,822
2021	0	3,443	0	191	3,252	257	2,995	599	4,471	(2,075)	45,747	0	45,747
2022	0	3,294	0	183	3,111	248	2,865	573	1,495	797	46,545	0	46,545
2023	0	3,351	0	186	3,165	259	2,915	583	1,576	756	47,301	0	47,301
2024	0	3,406	0	189	3,216	254	2,962	592	1,663	707	48,008	0	46,008
2025	0	3,457	0	192	3,205	258	3,007	601	1,754	851	48,659	0	48,659
2026	0	3,803	0	195	3,309	261	3,047	009	1,861	567	49,248	0	49,248
2027	0	3,546	0	197	3,349	205	3,084	617	1,054	513	49,759	0	49,759
2025	0	3,563	0	199	3,384	267	3,116	623	2,063	430	50,189	0	50,189
2029	0	3,614	0	201	3,413	270	3,143	629	2,180	335	50,524	0	50,524
2030	0	3,638	0	202	3,430	271	3,184	633	2,303	228	50,752	0	50,752
2031	0	3,654	0	203	3,451	273	3,179	638	2,434	109	50,861	0	50,861
2032	0	3,662	0	203	3,459	273	3,185	837	2,574	(26)	50,835	0	50,835
2003	0	3,660	0	203	3,457	273	3,184	637	2,722	(175)	50,060	0	50,660
2054	0	3,648	0	203	3,445	272	3,173	685	2,880	(341)	50,319	0	50,319
2035	0	3,623	0	201	3,422	270	3,151	830	3,047	(526)	49,792	0	49,792
2036	0	3,585	0	199	3,383	267	3,118	624	3,226	(731)	49,061	0	49,061
2037	0	3,532	0	196	3,366	264	3,073	615	3,416	(958)	48,103	0	48,103
2036	0	3,463	0	192	3,271	258	3,013	603	3,619	(1,208)	46,895	0	48,895
2039	0	3,376	0	186	3,189	252	2,937	537	3,835	(1,485)	45,410	0	45,410
2040	0	3,270	0	182	3,088	244	2,844	589	4,664	(1,789)	43,621	0	43,621
2041	0	3,141	0	174	2,966	234	2,732	546	4,310	(2,124)	41,497	0	41,497
2042	0	2,988	0	166	2,822	223	2,599	520	4,571	(2,492)	39,005	0	39,009
2043	0	2,808	0	156	2,652	210	2,443	489	4,850	(2,695)	36,109	0	36,109
2044	0	2,600	0	144	2,455	194	2,261	452	5,147	(3,338)	32,772	0	32,772
2043	0	2,360	0	131	2,228	176	2,052	410	5,464	(3,822)	28,949	0	28,949
2046	0	2,064	0	116	1,069	156	1,813	383	5,803	(4,353)	24,597	0	24,597
2047	0	1,771	0	98	1,673	132	1,546	308	6,165	(4,932)	19,665	0	19,685
2040	0	1,416	0	79	1,337	106	1,232	246	6,551	(5,566)	14,099	0	14,099
2046	0	1,015	0	56	959	76	863	177	6,964	(6,258)	7,841	0	7,341
2050	0	565	0	31	533	42	491	98	8,233	(7,841)	0	(0)	0
2051	0	0	0	0	0	0	0	0	0	(0)	(0)	0	(0)
2052	0	(0)	0	0	0	0	0	0	0	(0)	(0)	0	0
2053	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2004	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2053	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2056	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2057	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2056	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2009	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
2000	0	0	0	0	0	0	0	0	0	(0)	(0)	0	0
TOTAL	49,994	332,737	0	16,557	317,958	25,119	202,839	53,568	327,623	(47,146)		13,926	

TAX QUALIFIED EXTERNAL FUND [EQUITIES]

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR	DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND
BEG BAL					1,695				11,834		45,054
1998	379	628	757	71	1,788	1,207	13,041	(7,660)	5,381	9,880	54,734
1997	172	377	1,369	(992)	774	549	5,930	(2,921)	3,009	9,742	84,476
1998	98	211	562	(352)	422	307	3,316	(3,024)	202	10,348	74,822
1999	9	20	402	(382)	40	30	322	(322)	0	10,797	85,619
2000	0	0	40	(40)	0	0	0	0	0	11,421	97,040
2001	0	0	0	0	0	0	0	0	0	12,004	109,044
2002	0	0	0	0	0	0	0	0	0	12,605	121,649
2003	0	0	0	0	0	0	0	0	0	6,005	127,744
2004	0	0	0	0	0	0	0	0	0	6,400	134,144
2005	0	0	0	0	0	0	0	0	0	6,721	140,865
2056	0	0	0	0	0	0	0	0	0	7,058	147,923
2007	0	0	0	0	0	0	0	0	0	7,411	155,334
2008	0	0	0	0	0	0	0	0	0	7,783	163,117
2000	0	0	0	0	0	0	0	0	0	8,127	171,244
2010	0	0	0	0	0	0	0	0	0	8,532	179,776
2011	0	0	0	0	0	0	0	0	0	8,957	188,733
2012	0	0	0	0	0	0	0	0	0	9,402	198,135
2013	0	0	0	0	0	0	0	0	0	9,544	207,680
2014	0	0	0	0	0	0	0	0	0	(2,226)	205,453
2015	0	0	0	0	0	0	0	0	0	(3,749)	201,704
2018	0	0	0	0	0	0	0	0	0	(12,805)	188,899
2017	0	0	0	0	0	0	0	0	0	(40,189)	148,710
2018	0	0	0	0	0	0	0	0	0	(44,746)	103,962
2019	0	0	0	0	0	0	0	0	0	(42,604)	61,358
2020	0	0	0	0	0	0	0	0	0	(13,536)	47,822
2021	0	0	0	0	0	0	0	0	0	(2,075)	45,747
2022	0	0	0	0	0	0	0	0	0	797	48,545
2023	0	0	0	0	0	0	0	0	0	756	47,301
2024	0	0	0	0	0	0	0	0	0	707	48,009
2025	0	0	0	0	0	0	0	0	0	851	48,859
2023	0	0	0	0	0	0	0	0	0	587	49,246
2027	0	0	0	0	0	0	0	0	0	513	49,759
2025	0	0	0	0	0	0	0	0	0	430	50,169
2029	0	0	0	0	0	0	0	0	0	335	50,524
2030	0	0	0	0	0	0	0	0	0	226	50,752
2031	0	0	0	0	0	0	0	0	0	109	50,881
2032	0	0	0	0	0	0	0	0	0	(26)	50,835
2033	0	0	0	0	0	0	0	0	0	(175)	50,680
2004	0	0	0	0	0	0	0	0	0	(341)	50,319
2035	0	0	0	0	0	0	0	0	0	(526)	49,792
2030	0	0	0	0	0	0	0	0	0	(731)	49,061
2037	0	0	0	0	0	0	0	0	0	(958)	48,103
2038	0	0	0	0	0	0	0	0	0	(1,208)	48,695
2030	0	0	0	0	0	0	0	0	0	(1,485)	45,410
2040	0	0	0	0	0	0	0	0	0	(1,789)	43,621
2041	0	0	0	0	0	0	0	0	0	(2,124)	41,497
2042	0	0	0	0	0	0	0	0	0	(2,492)	39,005
2043	0	0	0	0	0	0	0	0	0	(2,805)	36,109
2044	0	0	0	0	0	0	0	0	0	(3,338)	32,772
2043	0	0	0	0	0	0	0	0	0	(3,822)	28,946
2046	0	0	0	0	0	0	0	0	0	(4,353)	24,597
2047	0	0	0	0	0	0	0	0	0	(4,932)	19,865
2048	0	0	0	0	0	0	0	0	0	(5,566)	14,099
2040	0	0	0	0	0	0	0	0	0	(6,258)	7,841
2050	0	0	0	0	0	0	0	0	0	(7,841)	0
2051	0	0	0	0	0	0	0	(0)	0	0	0
2032	0	0	0	0	0	0	0	(0)	0	0	0
2053	0	0	0	0	0	0	1	(0)	1	0	1
2054	0	0	0	0	0	0	1	(0)	1	0	1
2035	0	0	0	0	0	0	1	(0)	1	0	1
2038	0	0	0	0	0	0	1	(0)	1	0	1
2057	0	0	0	0	0	0	1	(0)	1	0	1
2058	0	0	0	0	0	0	1	(0)	1	0	1
2059	0	0	0	0	0	0	1	(0)	1	0	1
2060	0	0	0	0	0	0	1	(0)	1	0	1
TOTAL	657	1,437	3,131	(1,695)	4,699	2,093		(13,926)		(45,053)	

NONTAX QUALIFIED
EXTERNAL FUND
[FIXED INCOME]

YEAR	ANNUITY PAY	TAX PAY ON INVEST EARN	TAXABLE INTEREST	TAX EXEMPT INTEREST	ADMIN EXPENSE (TOT FUND)	DECOMM EXPENDITURES	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)
BEG BAL										0
1996	1,277	(1,326)	0	0	126	0	(176)	(176)	176	0
1997	10,130	(1,276)	0	0	140	0	8,714	8,714	(8,714)	0
1998	10,130	(1,359)	0	0	189	0	6,582	6,582	(6,582)	0
1999	10,130	(1,557)	0	0	243	0	8,331	8,331	(5,495)	2,836
2000	10,130	(1,605)	0	153	301	0	8,176	11,014	(4,760)	6,255
2001	10,130	(2,093)	0	338	303	0	8,009	14,264	(4,265)	9,999
2002	10,130	(2,424)	0	540	430	0	7,816	17,816	(3,726)	14,090
2003	0	(2,787)	0	761	501	0	(2,527)	11,563	4,625	16,188
2004	0	(3,235)	0	674	536	0	(2,896)	13,292	5,030	18,321
2005	0	(3,485)	0	989	572	0	(3,068)	15,254	5,364	20,008
2006	0	(3,728)	0	1,113	611	0	(3,226)	17,382	5,887	23,070
2007	0	(3,973)	0	1,246	852	0	(3,379)	19,691	6,834	25,726
2008	0	(4,224)	0	1,389	695	0	(3,531)	22,194	23,825	46,019
2009	0	(4,892)	0	2,485	742	52	(3,200)	42,819	24,947	67,766
2010	0	(4,697)	0	3,659	788	55	(1,878)	65,880	25,578	91,467
2011	0	(4,431)	0	4,939	831	56	(380)	91,087	26,123	117,210
2012	0	(4,113)	0	6,329	877	62	1,278	116,488	26,562	145,070
2013	0	(3,741)	0	7,834	923	430	2,730	147,800	27,048	174,048
2014	0	(3,315)	0	9,442	959	14,495	(9,337)	155,511	29,835	195,368
2015	0	(2,865)	0	10,550	960	16,115	(9,392)	185,974	27,240	213,214
2016	0	(2,160)	0	11,514	940	26,291	(17,877)	195,336	24,063	219,402
2017	0	(1,433)	0	11,846	878	58,979	(47,442)	171,960	0	171,960
2018	0	(201)	0	9,286	088	69,899	(51,502)	120,457	0	120,457
2019	0	(141)	0	6,605	462	54,887	(48,985)	71,473	0	71,473
2020	0	(83)	0	3,660	286	19,060	(15,570)	55,903	0	55,903
2021	0	(85)	0	3,019	224	5,130	(2,401)	53,502	0	53,502
2022	0	(62)	0	2,880	214	1,715	897	54,406	0	54,400
2023	0	(84)	0	2,938	218	1,800	648	55,247	0	55,247
2024	0	(65)	0	2,983	221	1,908	790	56,037	0	58,037
2025	0	(85)	0	3,926	224	2,013	724	56,761	0	58,761
2026	0	(66)	0	3,065	227	2,124	648	57,406	0	57,409
2027	0	(67)	0	3,100	230	2,242	561	57,970	0	57,970
2020	0	(66)	0	3,130	232	2,368	463	58,433	0	58,433
2029	0	(66)	0	3,155	234	2,501	352	58,785	0	53,785
2030	0	(69)	0	3,174	235	2,643	228	59,013	0	59,013
2031	0	(69)	0	3,167	230	2,793	86	59,101	0	59,101
2032	0	(69)	0	3,191	236	2,953	(67)	59,034	0	59,034
2033	0	(69)	0	3,188	286	3,124	(241)	58,703	0	53,793
2004	0	(69)	0	3,175	233	3,305	(434)	58,359	0	53,359
2038	0	(88)	0	3,151	233	3,487	(647)	57,712	0	57,712
2033	0	(67)	0	3,116	231	3,702	(884)	58,828	0	56,628
2037	0	(66)	0	3,059	227	3,926	(1,146)	55,663	0	55,863
2033	0	(65)	0	3,007	223	4,152	(1,433)	54,250	0	54,250
2030	0	(63)	0	2,830	217	4,400	(1,751)	52,499	0	52,499
2040	0	(61)	0	2,835	210	4,064	(2,100)	50,399	0	50,399
2041	0	(59)	0	2,722	202	4,845	(2,484)	47,914	0	47,914
2042	0	(66)	0	2,587	192	5,245	(2,905)	45,009	0	45,009
2043	0	(53)	0	2,430	180	5,565	(3,367)	41,042	0	41,042
2044	0	(49)	0	2,249	167	5,908	(3,873)	37,789	0	37,789
2045	0	(44)	0	2,040	151	6,270	(4,426)	33,343	0	33,343
2040	0	(39)	0	1,801	133	8,659	(5,031)	26,312	0	26,312
2047	0	(38)	0	1,529	113	7,074	(5,692)	22,621	0	22,621
2046	0	(26)	0	1,222	99	7,518	(6,413)	16,208	0	16,208
2049	0	(19)	0	875	85	7,091	(7,200)	9,008	0	9,009
2056	0	(11)	0	485	38	9,448	(9,068)	(0)	0	0
2051	0	0	0	0	(0)	0	0	0	(0)	0
2052	0	0	0	0	(0)	0	0	0	(0)	0
2053	0	0	0	0	(0)	0	0	0	(0)	0
2054	0	0	0	0	(0)	0	0	0	(0)	0
2055	0	0	0	0	(0)	0	0	0	(0)	0
2038	0	0	0	0	(0)	0	0	0	(0)	0
2057	0	0	0	0	(0)	0	0	0	(0)	0
2055	0	0	0	0	(0)	0	0	0	(0)	0
2056	0	0	0	0	(0)	0	0	0	(0)	0
2050	0	0	0	0	(0)	0	0	0	(0)	0
TOTAL	82,059	(67,069)	0	174,922	20,593	375,959	(226,630)		226,830	

[redacted]MONTAX QUALIF[redacted]
EXTERNAL FUND
(EQUITIES)

[ASSUMES TAXES PAID ON GAIN REALIZED ON TRANSFER NEXT YEAR]

YEAR		DIVIDENDS	TOTAL CAP GAIN	REAL CAP GAIN	UNREAL CAP GAIN	CUM UNREAL CAP GAIN	CHANGE IN FUND	ACCUMULATED FUND (BEF TRANS)	TRANSFER	ACCUMULATED FUND (AFT TRANS)	TOTAL CHANGES IN FUND	TOTAL ACCUMULATED FUND	TOTAL QUAL AND NONQUAL FUNDS
BEG BAL						7,676				31,919		31,919	76,973
	1996	1,021	2,234	3,033	(799)	7,077	3,258	35,175	(178)	34,996	3,079	34,998	89,732
	1997	1,120	2,450	2,685	(433)	6,644	3,570	38,568	6,714	47,282	12,284	47,282	111,758
	1998	1,513	3,310	2,938	324	6,988	4,823	52,105	8,582	60,687	13,405	60,687	135,509
	1999	1,042	4,248	3,385	803	7,851	6,190	66,877	5,495	72,372	14,521	75,208	160,827
	2000	2,316	5,060	3,875	1,191	9,042	7,382	79,754	4,760	84,514	15,550	90,766	187,808
	2001	2,704	5,916	4,487	1,429	10,471	8,620	93,134	4,265	97,399	16,830	107,398	216,442
	2002	3,117	6,818	5,187	1,631	12,102	9,935	107,334	3,726	111,069	17,751	125,149	248,798
	2003	3,554	7,774	5,953	1,811	13,913	11,326	122,387	(4,625)	117,763	8,801	133,951	281,695
	2004	3,766	8,243	7,015	1,228	15,142	12,012	129,774	(5,030)	124,745	9,116	143,088	297,210
	2005	3,992	8,732	7,573	1,159	16,301	12,724	137,488	(5,354)	132,115	9,658	152,723	293,586
	2000	4,226	9,246	8,109	1,139	17,440	13,476	145,590	(5,667)	139,993	10,250	162,973	310,899
	2007	4,477	9,793	8,647	1,146	18,588	14,270	154,173	(6,034)	148,139	10,891	173,864	329,198
	2000	4,740	10,370	9,196	1,174	19,760	15,110	163,249	(23,825)	139,424	11,580	185,444	348,561
	2000	4,462	9,760	10,875	(1,115)	18,845	14,221	153,845	(24,947)	128,898	11,021	196,485	367,709
	2010	4,116	9,009	10,415	(1,406)	17,239	13,127	141,825	(25,578)	116,247	11,249	207,714	387,400
	2011	3,720	8,137	9,789	(1,652)	15,587	11,867	128,104	(20,123)	101,981	11,477	219,191	407,924
	2012	3,263	7,139	9,043	(1,964)	13,863	10,402	112,383	(20,562)	85,801	11,880	230,671	429,007
	2013	2,748	6,008	6,172	(2,168)	11,517	8,752	94,553	(27,048)	67,505	11,482	242,353	450,033
	2014	2,160	4,725	7,179	(2,453)	9,063	6,886	74,390	(29,855)	44,536	(2,452)	230,962	445,358
	2015	1,425	3,117	6,200	(3,883)	5,680	4,543	49,076	(27,240)	21,836	(4,850)	235,052	436,756
	2016	899	1,529	4,576	(3,048)	2,983	2,227	24,065	(24,065)	0	(15,630)	219,402	408,301
	2017	0	0	2,633	(2,933)	0	0	0	0	0	(47,442)	171,960	320,669
	2018	0	0	0	0	0	0	0	0	0	(51,502)	129,457	224,419
	2019	0	0	0	0	0	0	0	0	0	(48,985)	71,473	132,831
	2020	0	0	0	0	0	0	0	0	0	(15,570)	55,903	103,725
	2021	0	0	0	0	0	0	0	0	0	(2,401)	53,502	98,250
	2022	0	0	0	0	0	0	0	0	0	897	54,400	100,944
	2023	0	0	0	0	0	0	0	0	0	848	55,247	102,548
	2024	0	0	0	0	0	0	0	0	0	790	56,037	104,045
	2025	0	0	0	0	0	0	0	0	0	724	56,761	105,420
	2020	0	0	0	0	0	0	0	0	0	848	57,409	106,655
	2027	0	0	0	0	0	0	0	0	0	501	57,970	107,729
	2026	0	0	0	0	0	0	0	0	0	463	56,433	108,622
	2029	0	0	0	0	0	0	0	0	0	352	56,785	109,309
	2000	0	0	0	0	0	0	0	0	0	226	59,013	109,785
	2031	0	0	0	0	0	0	0	0	0	88	59,101	109,962
	2032	0	0	0	0	0	0	0	0	0	(67)	50,034	109,869
	2033	0	0	0	0	0	0	0	0	0	(241)	58,793	109,453
	2034	0	0	0	0	0	0	0	0	0	(484)	56,359	108,678
	2035	0	0	0	0	0	0	0	0	0	(647)	57,712	107,504
	2038	0	0	0	0	0	0	0	0	0	(664)	53,828	105,899
	2037	0	0	0	0	0	0	0	0	0	(1,146)	55,663	103,788
	2038	0	0	0	0	0	0	0	0	0	(1,436)	54,250	101,145
	2038	0	0	0	0	0	0	0	0	0	(1,751)	52,499	97,909
	2040	0	0	0	0	0	0	0	0	0	(2,100)	50,399	94,019
	2041	0	0	0	0	0	0	0	0	0	(2,464)	47,914	89,411
	2042	0	0	0	0	0	0	0	0	0	(2,905)	45,009	84,014
	2043	0	0	0	0	0	0	0	0	0	(3,367)	41,642	77,752
	2044	0	0	0	0	0	0	0	0	0	(3,873)	37,789	70,541
	2045	0	0	0	0	0	0	0	0	0	(4,426)	33,343	62,293
	2046	0	0	0	0	0	0	0	0	0	(5,031)	26,312	52,909
	2047	0	0	0	0	0	0	0	0	0	(5,692)	22,621	42,265
	2046	0	0	0	0	0	0	0	0	0	(6,413)	16,208	30,306
	2046	0	0	0	0	0	0	0	0	0	(7,200)	9,008	16,949
	2000	0	0	0	0	0	0	0	(0)	(0)	(9,008)	(0)	0
	2051	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)
	2052	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	0
	2053	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2054	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2055	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2000	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2057	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2058	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2059	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
	2000	(0)	(0)	(0)	(0)	(0)	(0)	(1)	0	(1)	(0)	(1)	0
TOTAL		61,065	133,624	141,590	(7,876)	263,818	194,710		(226,030)		(31,920)		

NET INCOME IMPACT	REV REQ IMPACT	CAPITAL IMPACTS: TOT FED/STATE DEFERRED TAX BALANCES	CAPITAL IMPACTS: REV REQ IMPACT	TOTAL NQ REV REQ IMPACT	TOTAL DECOMM REV REQ IMPACT	NPV OF TOT REV REQ
		11,275				
279	(467)	12,831	1,628	1,189	6,301	7,471
(5,026)	8,398	17,935	1,850	10,248	17,368	21,917
(4,880)	8,152	23,185	2,568	10,738	17,680	35,350
(4,657)	7,779	28,659	3,343	11,122	18,264	47,825
(4,363)	7,266	34,420	4,133	11,421	18,563	59,351
(4,029)	6,731	40,527	4,964	11,695	18,837	89,964
(3,861)	6,115	48,997	5,844	11,959	19,101	79,786
2,805	(4,686)	49,802	6,777	2,091	2,091	80,761
3,106	(5,286)	52,088	7,181	1,894	1,894	81,504
3,410	(5,897)	56,378	7,836	1,941	1,941	82,313
3,657	(6,108)	80,035	8,130	2,021	2,021	83,021
3,911	(8,533)	83,946	8,857	2,124	2,124	83,698
4,176	(8,976)	88,122	9,221	2,245	2,245	84,349
4,891	(8,171)	72,903	9,823	1,852	1,652	84,783
5,101	(8,522)	78,072	10,528	2,064	2,004	86,263
5,292	(8,641)	83,342	11,258	2,417	2,417	85,789
5,477	(9,149)	83,794	12,018	2,869	2,869	86,357
5,654	(9,444)	94,271	12,604	3,360	3,350	88,061
5,802	(9,891)	94,255	13,594	3,903	3,903	87,599
5,728	(9,565)	93,514	13,592	4,027	4,027	86,198
5,389	(9,002)	88,351	13,485	4,483	4,483	68,804
4,887	(7,829)	70,169	12,740	4,912	4,912	89,407
3,025	(5,063)	49,153	10,116	5,063	5,088	89,973
2,032	(3,305)	29,165	7,083	3,693	3,698	90,348
1,266	(2,160)	22,811	4,208	2,040	2,040	90,536
1,069	(1,803)	21,832	3,286	1,485	1,438	90,651
1,040	(1,752)	22,192	3,148	1,397	1,397	90,767
1,069	(1,781)	22,532	3,208	1,419	1,419	90,866
1,083	(1,809)	22,649	3,249	1,440	1,440	90,958
1,098	(1,835)	23,140	3,205	1,489	1,460	91,040
1,112	(1,850)	23,400	3,337	1,479	1,479	91,117
1,125	(1,879)	23,625	3,374	1,495	1,495	91,188
1,136	(1,898)	23,811	3,407	1,509	1,509	91,253
1,145	(1,913)	23,952	3,434	1,521	1,521	91,312
1,152	(1,925)	24,944	3,484	1,529	1,529	91,367
1,157	(1,932)	24,079	3,487	1,585	1,535	91,416
1,156	(1,834)	24,951	3,472	1,536	1,536	91,462
1,155	(1,630)	23,653	3,485	1,536	1,530	91,503
1,150	(1,920)	23,777	3,454	1,534	1,334	91,540
1,140	(1,964)	23,513	3,429	1,525	1,525	91,574
1,126	(1,850)	23,153	3,391	1,510	1,510	91,604
1,107	(1,649)	22,880	3,389	1,490	1,490	91,631
1,883	(1,809)	22,103	3,271	1,463	1,463	91,656
1,053	(1,758)	21,389	3,167	1,429	1,429	91,677
1,016	(1,697)	20,834	3,084	1,367	1,367	91,698
973	(1,925)	19,521	2,981	1,336	1,336	91,713
921	(1,539)	16,336	2,815	1,276	1,276	91,727
882	(1,439)	16,966	2,844	1,205	1,205	91,740
793	(1,324)	15,358	2,446	1,122	1,122	91,750
713	(1,192)	13,585	2,219	1,027	1,027	91,759
623	(1,041)	11,535	1,959	916	918	91,756
520	(869)	9,216	1,653	794	794	91,772
404	(676)	6,803	1,329	653	663	91,776
274	(453)	3,670	952	495	495	91,779
122	(204)	(0)	529	326	326	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(0)	(0)	(0)	(0)	91,780
(0)	0	(9)	(0)	(0)	(0)	91,780
77,557	(129,553)		239,470	159,917	299,911	

Wisconsin Power and Light Company

Position Paper Concerning Accelerated Depreciation and Decommissioning Cost Recovery Strategies For the Kewaunee Nuclear Power Plant

It is a well known fact that, dating back to the early 1980's, the Kewaunee Nuclear Power Plant (KNPP) has been experiencing degradation of steam generator tubes. During the last refueling outage, new steam generator tube indications were discovered, which may result in an accelerated degradation profile of the steam generator tubes. The current condition of steam generator tubes, combined with known degradation profiles, makes it unlikely that the steam generators will function through 2013, the end of the licensed life of KNPP. Accordingly, it is not unreasonable, and is probably prudent, to explore accelerated cost recovery strategies relative to the remaining net value of KNPP and unfunded decommissioning costs.

Wisconsin Power and Light (WP&L) supports accelerating the depreciation of the remaining book value of KNPP as a strategy to mitigate potential impacts of stranded investment. In support of this recommendation, WP&L notes that studies performed by Wisconsin Public Service Corporation (WPSC), the operator of KNPP, indicate that the steam generators are not likely to be capable of physically operating beyond the year 2006. Other studies performed by WPSC using less favorable, but nonetheless realistic assumptions, indicate that the steam generators might not physically operate beyond the turn of the century. Given that the Commission has not ruled regarding whether or not the steam generators can be replaced, WP&L believes it is a reasonable and prudent strategy to accelerate depreciation over a shortened period of time to collect such costs from those customers who are most likely to receive the operating benefits from the plant. Since each successive outage into the future possesses a higher attendant probability that KNPP would need to consider early shutdown due to progressive steam tube degradation, WP&L proposes that the remaining net book value of the plant be amortized during the first six years of the 1997-2006 timeframe. Such a strategy effectively mitigates the risk that large unrecovered net plant balances would need to be collected from customers who will receive no operational benefit from KNPP. The estimated impact of WP&L's proposal would increase annual revenue requirements by approximately $5 million, excluding consideration of unamortized nuclear fuel investments.

WP&L believes, on the other hand, that any decision regarding accelerated recovery of decommissioning costs should be deferred until the Commission answers the question of whether or not steam generator replacement will be granted. While the same argument for accelerated recovery that WP&L proffers with respect to net plant balances could be used to justify accelerated recovery of decommissioning costs, there are two significant differences that serve to undermine such parallel arguments. First, the remaining decommissioning costs represent a more significant and material portion of WP&L's cost of service and would significantly increase revenue requirements in the near term under an accelerated recovery strategy. Secondly, and perhaps more importantly, to the extent that the Commission grants approval to replace the steam generators, a significant intergenerational inequity would be transacted upon ratepayers if the Commission also approved the accelerated recovery of decommissioning costs. Stated alternatively, if the steam generators are ultimately replaced and the recovery of decommissioning costs is accelerated, the owners of the plant in a future competitive marketplace would receive windfall profits because decommissioning costs would already have been recovered. The level of windfall profits would increase to the extent that steam generator replacement supports life extension beyond 2013. Accordingly, WP&L recommends that accelerated recovery of decommissioning costs be considered only after the question of steam generator replacement is resolved in the negative, by either the Commission or by the owners of KNPP.