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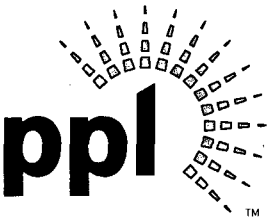

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SUSQUEHANNA STEAM ELECTRIC STATION
REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA) SECTION 4.3 SUPPLEMENT
PLA-6464

Docket Nos. 50-387 and 50-388

References: 1) *PLA-6110, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC), "Application for Renewed Operating License Numbers NPF-14 and NPF-22," dated September 13, 2006.*

2) *Letter from Ms. E. H. Gettys (USNRC) to Mr. B. T. McKinney (PPL), "Request for Additional Information for the Review of the Susquehanna Steam Electric Station, Units 1 and 2 License Renewal Application," dated October 22, 2008.*

3) *PLA-6441, Mr. W. H. Spence (PPL) to Document Control Desk (USNRC), "Request for Additional Information for the Review of the Susquehanna Steam Electric Station Units 1 and 2, License Renewal Application (LRA) Section 4.3," dated November 26, 2008.*

In accordance with the requirements of 10 CFR 50, 51, and 54, PPL requested the renewal of the operating licenses for the Susquehanna Steam Electric Station (SSES) Units 1 and 2 in Reference 1. Reference 2 is a request for additional information (RAI) related to License Renewal Application (LRA) Section 4.3. Reference 3 provided the PPL response to Reference 2.

Please replace Reference 3, in its entirety, with the information contained herein as the PPL response to Reference 2. The basis for this request is that a portion of the information in Reference 3 was originally considered to be proprietary and a request to withhold the proprietary information from public disclosure, in accordance with 10 CFR 2.390, was included. It was later determined that none of the information in Reference 3 is proprietary and the request to withhold any of the information from public disclosure is not required.

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The Enclosure provides the PPL non-proprietary responses and the additional requested information in Reference 2.

The Attachment contains SSES plant data for dissolved oxygen levels in support of the response to RAI 4.3-9.

There is one new regulatory commitment contained herein. Commitment #60, regarding actions to be taken in response to NRC concerns with the fatigue analysis software used at SSES, is added to LRA Table A-1.

If you have any questions, please contact Mr. Duane L. Filchner at (610) 774-7819.

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on: 12-12-08

Richard D Pagodin for WH Spence

W. H. Spence

Enclosure: Response to NRC's Request for Additional Information (RAI)

Attachment: Dissolved Oxygen Data to Support Response to RAI 4.3-9

Copy: NRC Region I
Ms. E. H. Gettys, NRC Project Manager, License Renewal, Safety
Mr. R. Janati, DEP/BRP
Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector
Mr. A. L. Stuyvenberg, NRC Project Manager, License Renewal, Environmental

Enclosure to PLA-6464
Response to NRC's Request for Additional Information (RAI)

NRC RAI 4.3-8:

Section 4.3.2 of the license renewal application (LRA) discusses the evaluation of the Reactor Pressure Vessel (RPV) internals. The LRA indicates that structural evaluations were performed to address the effects of operation under extended power uprate conditions and the extended period of operation to 60 years. Explain how the number of reactor design transient cycles for 60 years of plant operation was determined for the analysis of the RPV internals.

PPL Response:

LRA Section 4.3.2 identifies the fatigue evaluations performed to demonstrate the design adequacy of the RPV internals as a time-limited aging analysis (TLAA) requiring disposition under 10 CFR 54.21(c)(1). In support of the extended power uprate (EPU) and license renewal (LR) projects for SSES, GE-Hitachi (GEH), under contract to PPL, performed the structural evaluation of the RPV internals to address the effects of operation under EPU conditions with extended operation to 60 years. The GEH evaluation concluded that the fatigue usage factors remain within the ASME Section III Subsection NG allowable limits. This evaluation was the basis for the disposition of this TLAA under 10 CFR 54.21(c)(1)(ii) in LRA Section 4.3.2.

As stated in the SSES FSAR Section 3.9.1.1.4, the fatigue analyses for the original 40-year life of the RPV internals considered the reactor design transients that are documented in the SSES FSAR Table 3.9-1. The structural evaluation of the RPV internals for EPU conditions did not alter the number of transient cycles that were considered for the original 40-year life. The EPU conditions were evaluated for any impact on the fatigue analyses of the internals, and new 40-year cumulative usage factors (CUFs) were determined for the EPU conditions. For extended operation to 60 years, the first step of the evaluation consisted of multiplying the new 40-year CUF for each component by a factor of 1.5. The resulting value for each component was considered to be a conservatively projected value for the 60-year CUF. If the 60-year CUF was less than 1.0, the evaluation was complete. If the 60-year CUF was not less than 1.0, additional evaluation was performed for the specific component. Ultimately, the GEH evaluation found that all RPV internals would have 60-year CUFs, under EPU conditions, of less than 1.0.

The projection methodology used by GEH increased the number of reactor design transient cycles for 60 years of plant operation by a factor of 1.5 over the original numbers of cycles defined in SSES FSAR Table 3.9-1.

RAI 4.3-9:

Section 4.3.3 of the LRA discusses the evaluation of the effects of the reactor coolant environment on the fatigue life of components and piping. Table 4.3-3 provides the 60-year environmental cumulative usage factor (CUF) for each component evaluated. Provide a summary of the environmental factor (F*en*) calculation for each component analyzed; including the values of oxygen level, temperature and strain rate used in the calculations. Also provide the basis for oxygen level, temperature and strain rate values used in the F*en* calculations.

PPL Response:

Summaries of the environmental factor (F_{en}) calculations for each component analyzed for each SSES unit, including the values of oxygen level, temperature and strain rate used in the calculations, are provided in the tables below.

The temperature and strain rate values that were used in the F_{en} calculations were assumed to be the bounding values, as explained in the notes for each table below.

The dissolved oxygen levels that were used in the F_{en} calculations were based on the review of plant data. The specific time periods for which the plant data was reviewed to determine the typical levels used in the F_{en} calculations, which were performed in 2006, were not documented in the calculations. Thus, in response to this RAI, PPL sampled dissolved oxygen data from both SSES units, covering operation before and after the implementation of hydrogen water chemistry, to demonstrate that the levels assumed in the calculations are typical levels encountered during plant operation. The sampled data is presented in the Attachment. The data presented for time periods after 1999 is after the implementation of hydrogen water chemistry on both units.

The sampled data in the Attachment supports the following general conclusions, which support the values used for O* in the F_{en} calculations. O*, defined in NUREG/CR-6583 and NUREG/CR-5704, is a parameter determined by the dissolved oxygen level.

- The dissolved oxygen levels in the SSES Unit 1 and Unit 2 feedwater systems, before and after the implementation of hydrogen water chemistry, are maintained at less than 50 parts per billion (ppb).

- Before the implementation of hydrogen water chemistry, the dissolved oxygen levels in the SSES Unit 1 and Unit 2 reactor coolant systems were greater than 200 ppb and less than 300 ppb.

- With hydrogen water chemistry in service, the dissolved oxygen levels in the SSES Unit 1 and Unit 2 reactor coolant systems, are less than 50 ppb.

SSES Unit 1 Environmental Fatigue Calculations

Equivalent NUREG/CR-6260 Location	Material	60-Year CUF [1]	Overall Environmental Multiplier, F_{en} [2]	60-Year Environmental CUF [3]	Notes
Reactor Vessel (Shell @ Shroud Support)	Low Alloy Steel	0.3121	13.04	4.070	4
Recirculation Inlet Nozzle (Low Alloy Forging)	Low Alloy Steel	0.1956	13.04	2.551	4
Recirculation Outlet Nozzle (Low Alloy Forging)	Low Alloy Steel	0.4007	13.04	5.225	4
Feedwater Nozzle (Safe End)	Carbon Steel	0.3190	1.74	0.555	5
Feedwater Nozzle (Low Alloy Forging)	Low Alloy Steel	0.0574	2.45	0.141	5
Core Spray Nozzle (Low Alloy Forging)	Low Alloy Steel	0.2197	13.04	2.866	4
Core Spray Nozzle (Safe End)	Inconel	0.6081	1.49	0.906	4,6
Feedwater Piping, Loop B, Break, Node 35	Carbon Steel	0.2044	2.45	0.502	5
RHR Supply Line Piping, Break, Node 669	Stainless Steel	0.8221	13.13	10.797	4
Recirc. Loop B Suction Piping, Break, Node 353	Stainless Steel	0.4568	13.13	6.000	4
Recirc. Loop A Suction Piping, Break, Node 430	Stainless Steel	0.2427	13.13	3.187	4

Notes:

1. Results obtained from **FatiguePro** fatigue usage accumulated as of 12/31/2002, and projected to 60 years.
2. An F_{en} multiplier was calculated for each respective location using the methodology of NUREG/CR-6583 for carbon/low alloy steels or NUREG/CR-5704 for stainless steels assuming the following conditions:
   - A bounding RPV fluid temperature, T, of 551°F
   - Bounding strain rates of 0.001%/sec for carbon/low alloy steels and 0.0004%/sec for stainless steels
   - 68% HWC conditions and 32% NWC conditions over a 60-year life. $F_{en} = 0.68 * F_{en\text{-}HWC} + 0.32 * F_{en\text{-}NWC}$
   - DO levels (ppb): Recirculation system: 253 with Normal Water Chemistry, 0.54 with Hydrogen Water Chemistry
     Feedwater system: 47 with Normal Water Chemistry, 40 with Hydrogen Water Chemistry
3. 60-Year Environmental CUF = F_{en} * 60-Year CUF.
4. The recirculation system water chemistry was used.
5. The feedwater system water chemistry was used.
6. The following is available for Alloy 600 (Inconel) material from O. Chopra, "Status of Fatigue Issues at Argonne National Laboratory," presented at EPRI Conference on Operating Nuclear Power Plant Fatigue Issues & Resolutions, Snowbird, UT, August 22-23, 1996:

   In air, $T < 150°C$: $\ln(N_{air}) = 6.940 - 1.776 \ln(\varepsilon_a - 0.12)$
   In air, $T \geq 150°C$: $\ln(N_{air}) = 7.438 - 1.776 \ln(\varepsilon_a - 0.12)$
   In water, $T < 150°C$: $\ln(N_{water}) = 6.539 - 1.776 \ln(\varepsilon_a - 0.12)$
   In water, $T \geq 150°C$: $\ln(N_{water}) = 7.037 - 1.776 \ln(\varepsilon_a - 0.12)$

   where: ε_a = strain amplitude (%)
   N = fatigue life (cycles to form 3 mm deep crack)
   T = temperature (°C)

   Thus, dividing N_{water} by N_{air}, a constant Fen value of 1.49 is obtained for all temperature values.

SSES Unit 2 Environmental Fatigue Calculations

Equivalent NUREG/CR-6260 Location	Material	60-Year CUF [1]	Overall Environmental Multiplier, F_{en} [2]	60-Year Environmental CUF [3]	Notes
Reactor Vessel (Shell @ Shroud Support)	Low Alloy Steel	0.2970	12.44	3.695	4
Recirculation Inlet Nozzle (Low Alloy Forging)	Low Alloy Steel	0.1734	12.44	2.158	4
Recirculation Outlet Nozzle (Low Alloy Forging)	Low Alloy Steel	0.3492	12.44	4.344	4
Feedwater Nozzle (Safe End)	Carbon Steel	0.3146	1.74	0.547	5
Feedwater Nozzle (Low Alloy Forging)	Low Alloy Steel	0.0343	2.45	0.084	5
Core Spray Nozzle (Low Alloy Forging)	Low Alloy Steel	0.1852	12.44	2.304	4
Core Spray Nozzle (Safe End)	Inconel	0.4011	1.49	0.598	4,6
Feedwater Piping, Loop B, Break, Node 35	Carbon Steel	0.1976	2.45	0.485	5
RHR Supply Line Piping, Break, Node 669	Stainless Steel	0.8220	13.26	10.898	4
Recirc. Loop B Suction Piping, Break, Node 353	Stainless Steel	0.4447	13.26	5.896	4
Recirc. Loop A Suction Piping, Break, Node 430	Stainless Steel	0.2344	13.26	3.107	4

Notes:

1. Results obtained from **FatiguePro** fatigue usage accumulated as of 4/13/2003, and projected to 60 years.
2. An F_{en} multiplier was calculated for each respective location using the methodology of NUREG/CR-6583 for carbon/low alloy steels or NUREG/CR-5704 for stainless steels assuming the following conditions:
   - A bounding RPV fluid temperature, T, of 551°F
   - Bounding strain rates of 0.001%/sec for carbon/low alloy steels and 0.0004%/sec for stainless steels
   - 70% HWC conditions and 30% NWC conditions over a 60-year life. $F_{en} = 0.70 * F_{en\text{-}HWC} + 0.30 * F_{en\text{-}NWC}$
   - DO levels (ppb): Recirculation system: 255 with Normal Water Chemistry, 0.64 with Hydrogen Water Chemistry
     Feedwater system: 40 with Normal Water Chemistry, 39 with Hydrogen Water Chemistry
3. 60-Year Environmental CUF = F_{en} * 60-Year CUF.
4. The recirculation system water chemistry was used.
5. The feedwater system water chemistry was used.
6. The following is available for Alloy 600 (Inconel) material from O. Chopra, "Status of Fatigue Issues at Argonne National Laboratory," presented at EPRI Conference on Operating Nuclear Power Plant Fatigue Issues & Resolutions, Snowbird, UT, August 22-23, 1996:

   In air, $T < 150°C$: $\ln(N_{air}) = 6.940 - 1.776 \ln(\varepsilon_a - 0.12)$
   In air, $T \geq 150°C$: $\ln(N_{air}) = 7.438 - 1.776 \ln(\varepsilon_a - 0.12)$
   In water, $T < 150°C$: $\ln(N_{water}) = 6.539 - 1.776 \ln(\varepsilon_a - 0.12)$
   In water, $T \geq 150°C$: $\ln(N_{water}) = 7.037 - 1.776 \ln(\varepsilon_a - 0.12)$

   where: ε_a = strain amplitude (%)
   N = fatigue life (cycles to form 3 mm deep crack)
   T = temperature (°C)

   Thus, dividing N_{water} by N_{air}, a constant Fen value of 1.49 is obtained for all temperature values.

RAI 4.3-10:

Table 4.3-2 of the LRA provides the 60-year CUF projections for the RPV shell at the shroud support for both units. List the transients that are the most significant contributors to the CUFs of both units. Discuss the fatigue analyses that were performed for the shroud support locations. Also include a discussion of any conservative assumptions that may have been used in the analyses.

PPL Response:

The fatigue analyses for the shroud support were performed by the reactor vessel manufacturer, Chicago Bridge and Iron Company (CBI), under contract to the General Electric Company (GE). The analyses were performed and are documented in the reactor vessel stress report as a part of the reactor pressure vessel design. The analyses were performed in compliance with the requirements of ASME Section III, 1968 Edition to and including Summer 1970 Addenda, and paragraph NB-3338.2(d)(4) of the Winter 1971 Addenda, which supersedes paragraph I-613(d) of the 1968 Edition.

The thermal transients applicable to the shroud support were specified by GE as a part of the SSES RPV design basis. The transients that were selected for detailed thermal analysis, on the basis of being the most severe, are 1) Natural Circulation Startup, 2) Pre-Op Blowdown, 3) Shutdown, and 4) Loss of AC Power. All other transients affecting the shroud support were grouped under the most severe of these four bounding transients, as the temperature gradients of the four evaluated transients were considered to bound those of all other applicable transients. Therefore, the analyses of these four transients yielded the most severe thermal stresses for the shroud support.

The stress analysis for the shroud support evaluated 40 locations in the shroud support area of the vessel, chosen on the basis of having the most severe stresses. The primary and primary plus secondary stress categories were evaluated in accordance with the ASME Code, Section III, Articles N-414.1, N-414.2, N-414.3, and N-414.4.

The fatigue analysis for the shroud support was performed in accordance with the ASME Code, Section III, Article N-414.5, for peak stress intensity. The ability of the vessel to withstand cyclic operation without fatigue failure is based on the largest magnitude of stress intensity and the largest stress concentration factor at any point of the stress model. For the low alloy steel portion of the shroud support, the maximum stress amplitude (S_a) value was determined to be 72.53 ksi, and the corresponding allowable number of cycles is 1500, per the ASME Section III fatigue curve, Figure N-415(A). For the inconel portion of the shroud support, the maximum S_a value was determined to be 81.20 ksi, and the corresponding allowable number of cycles is 2800, per the ASME Section III fatigue curve, Figure N-415(B).

All of the design transients, along with the associated number of cycles assumed in the 40-year life, considered to have an impact on fatigue are as follows:

Design Hydrotest	130 cycles
Startup and Shutdown	111 cycles
Turbine Trip	10 cycles
Partial Feedwater Heater Bypass	70 cycles
Turbine Generator Trip	40 cycles
All Other Scrams	140 cycles
Pre-Op Blowdown	10 cycles
Loss of AC Power	15 cycles
Design Seismic	10 cycles
Total Cycles:	536

Since the analysis conservatively assumed all transients would have the maximum S_a value, the maximum fatigue usage was conservatively determined as the total number of design transient cycles (536) divided by the allowable number of cycles determined for the maximum S_a value. Therefore, for the low alloy steel portion of the shroud support, the maximum fatigue usage is 536/1500, or 0.358. For the inconel portion, the maximum fatigue usage is 536/2800, or 0.191. The limiting value for the low alloy steel, which is applicable to both SSES units, was reported in Table 4.3-2 of the SSES LRA under the "Design CUF" column.

The "60-Year CUF Projections" for Unit 1 and Unit 2 are 0.312 and 0.297, respectively, as shown in Table 4.3-2 of the LRA. The actual plant cycle counts from the beginning and end of a ten-year period of plant operation were used to determine the fatigue usage at those same points in time, using the methodology used in the RPV stress report, as described above. Then, a representative rate of fatigue usage accumulation was determined and used to project the fatigue usage at 60 years, with some conservative adjustments to account for the power uprates implemented at both SSES units.

For Unit 1, the 60-year fatigue usage projection was calculated as follows:

$$U_{60} = U_{2002} + [\ (U_{2002} - U_{1992}) / Time_{1992\ to\ 2002}\ ] * Time_{2002\ to\ 2042} * F_{EPU}$$

where: U_{60} = the projected fatigue usage for 60 years of operation.

U_{1992} = the fatigue usage experienced as of 04/26/1992, which is the end of the 7th operating cycle. The 7th operating cycle represents the nearest outage that allows 10 years of plant operation to be considered for the forward projections. This value is calculated as the total number of analyzed

design transients that occurred as of 4/26/1992 divided by 1297.*

U_{2002} = the fatigue usage experienced as of 12/31/2002, which is the latest fatigue usage information. This value is calculated as the total number of analyzed design transients that occurred as of 12/31/1992 divided by 1297.*

$Time_{1992\ to\ 2002}$ = elapsed number of days from 1992 cycle counts (04/26/1992) to the date of the most recent fatigue usage (12/31/2002).

$Time_{2002\ to\ 2042}$ = elapsed number of days from most recent fatigue usage (12/31/2002) to the end of 60-year operating period (07/17/2042).

F_{EPU} = 20% Extended Power Uprate (EPU) factor = 1.20. It was conservatively assumed that EPU implementation occurred at the end of the last baselining period (12/31/2002).

* The design allowable number of cycles was reduced from 1500 to 1297 to conservatively account for the effects of the 5% power uprate implemented in 1995.

A similar calculation was performed for SSES-2 using unit-specific dates and cycle counts.

RAI 4.3-11:

The August 1, 2008, response to RAI B.3.1-2 indicates the FatiguePro software is used for stress-based fatigue (SBF) monitoring of the feedwater nozzle forgings, feedwater nozzle safe ends, and the control rod drive penetrations. The response to RAI B.3.1-1 also indicates that the SBF monitoring methodology was benchmarked against the relevant design basis stress report for each component to ensure valid fatigue monitoring program fatigue results.

a. Describe the procedure used to benchmark the SBF monitoring locations against the relevant design reports. List all the transients used for the benchmarking and indicate the design fatigue usage associated with each transient. Also, provide side-by-side comparison on stresses for each transient and each component used for the benchmarking.

b. Discuss how the SSES SBF monitoring addresses the concern raised in proposed Regulatory Information Summary (RIS), "Fatigue Analysis of Nuclear Power Plant Components," May 1, 2008 (73 FR 24094). Indicate whether any additional benchmarking of the SSES SBF monitoring is planned.

PPL Response:

Part a:

The SSES SBF locations in the FatiguePro software were benchmarked against the relevant design basis stress reports by evaluating the key transient pairings from the design basis stress reports using the FatiguePro SBF analysis, and comparing the resulting alternating stress intensities and fatigue usage from FatiguePro to the values determined in the design basis stress reports. Adjustments were made to the Green's Functions, where necessary, to calibrate the FatiguePro analytical models so that the results from the governing stress reports were closely matched for these key transient pairings. The adjustments included scaling the Green's Functions such that the peak stress intensity output from FatiguePro was equal to or higher than the peak stress intensity from the design basis stress report. Any differences were evaluated by an independent calculation to determine acceptability. Discussions of the benchmarking results are provided below for each of the three SBF monitored locations at SSES:

Feedwater Nozzle Safe End Location:

From the design basis stress report for normal/upset conditions, the critical transient pair is Turbine Roll-Hot Standby. The alternating stress intensity for this load pair was determined to be 124.95 ksi in the design basis stress report. The FatiguePro simulation of this transient pair yielded an alternating stress intensity of 125.2 ksi. Since the same ASME Code fatigue curves were used in FatiguePro as in the design basis stress report, the FatiguePro fatigue usage is slightly higher than the design basis stress report due to the slightly higher alternating stress intensity.

A similar stress comparison was performed for the Partial Feedwater Heater Bypass transient. The design basis stress report estimated the thermal stress intensity range as 60.8 ksi, and FatiguePro estimated this range to be 60.13 ksi. Although the FatiguePro result is 1% lower than the stress report result, this difference is considered to be within the acceptable accuracy of the analytical models.

Feedwater Nozzle Forging Location:

Since the feedwater nozzle forging is a part of the feedwater nozzle and the thermal stresses in the nozzle forging are significantly lower than in the safe end, the benchmarking of the safe end was considered to bound the nozzle forging location.

CRD Penetration Location:

From the design basis stress report for normal/upset conditions, the critical transient pair is Natural Circulation Startup-Loss of AC Power. The alternating stress intensity for this load pair was determined to be 177.8 ksi in the design basis stress report, which includes a stress concentration factor of 4.0 for the presence of a weld. The FatiguePro simulation of this transient pair yielded an alternating stress intensity of 166 ksi. The difference in stress was attributed to a conservative hypothetical temperature of 534°F used for the bottom head region in the design basis stress report, versus a temperature of 522°F predicted in the bottom head region by FatiguePro. The temperature value estimated by FatiguePro matches the temperature value from the SSES reactor vessel thermal cycle design drawing, and was therefore considered valid, and the lower stress determined by FatiguePro was therefore justified. The incremental fatigue usage for one cycle of this transient pairing was computed as 1/3400 = 0.00029 in the design basis stress report, whereas FatiguePro computed a value of 0.000238. The FatiguePro fatigue usage was lower as a result of the lower alternating stress intensity resulting from the lower bottom head region temperature.

For emergency/faulted conditions, the critical transient pair is Improper Startup-Pipe Rupture. The alternating stress intensity for this load pair was determined to be 282.7 ksi in the design basis stress report, which includes a stress concentration factor of 4.0 for the presence of a weld. The FatiguePro simulation of this transient pair yielded an alternating stress intensity of 285 ksi. The incremental fatigue usage for one cycle of this transient pairing was computed as 1/27 = 0.037 in the design basis stress report, whereas FatiguePro computed a value of 0.0276. The difference in fatigue usage was attributed to a conservatively bounding value of K_e, the multiplier for the maximum stress amplitude (S_a) that is required when the alternating stress intensity is greater than three times the design stress intensity (S_m). A K_e value of 3.33 was used in the design basis stress report based on the reactor design temperature of 575°F, versus a K_e value of 2.95 computed by FatiguePro using the maximum transient temperature of 550°F.

Part b:

At issue in the subject RIS is the conservatism of FatiguePro when a single stress term Green's Function is used. Single stress term Green's Functions are used routinely in FatiguePro, as that is required by the methodology used by the software. As discussed in the response to Part a above, the SSES FatiguePro SBF component models were calibrated so that the key fatigue results (i.e., alternating stress intensity and fatigue usage) matched the results documented in the governing design basis stress reports, which were certified in accordance with ASME Code, Section III methodology. Therefore, any approximations or potential non-conservatisms that may have been invoked in FatiguePro through the deployment of a single stress term Green's Function were compensated for in the calibration process.

The FatiguePro calibration process was not performed for all possible transient pairing scenarios. As a result, it is not possible to demonstrate, without further evaluation, that the SSES FatiguePro application fully addresses all possible scenarios associated with the issues identified in the subject RIS. To address this uncertainty, PPL will either implement fatigue monitoring software that satisfactorily addresses all issues raised in the RIS, or perform a confirmatory ASME Code, Section III fatigue evaluation for the SBF-monitored locations to justify the existing FatiguePro methodology prior to entering the period of extended operation.

Table A-1 SSES License Renewal Commitments

➢ LRA Table A-1 (LRA page A-55) is revised by addition (***bold italics***) as follows:

Table A-1
SSES License Renewal Commitments

Item Number	Commitment	FSAR Supplement Location (LRA App. A)	Enhancement or Implementation Schedule
60) Activities in Response to NRC Concerns Regarding Fatigue Analyses	***PPL will either (1) implement fatigue monitoring software that satisfactorily addresses all issues raised in the proposed Regulatory Information Summary (RIS), "Fatigue Analysis of Nuclear Power Plant Components," May 1, 2008 (73 FR 24094), or (2) perform a confirmatory ASME Code, Section III fatigue evaluation for the SBF-monitored locations to justify the existing FatiguePro methodology used at SSES Units 1 and 2.***	———	***Prior to the period of extended operation.***

Attachment to PLA-6464
Dissolved Oxygen Data
To Support Response to RAI 4.3-9

Unit 1 Dissolved Oxygen (DO) Data - 1994				Unit 2 Dissolved Oxygen (DO) Data - 1994			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
2/1/1994 8:15	215	2/1/1994 8:15	20.8	7/1/1994 8:55	243	7/1/1994 8:55	42.2
2/2/1994 8:00	221	2/2/1994 8:00	20.9	7/2/1994 8:20	244	7/2/1994 8:20	42.8
2/3/1994 7:55	222	2/3/1994 7:55	21.1	7/3/1994 8:00	244	7/3/1994 8:00	41.6
2/4/1994 7:55	225	2/4/1994 7:55	21.1	7/4/1994 8:05	241	7/4/1994 8:05	41.7
2/5/1994 8:05	225	2/5/1994 8:05	31.1	7/5/1994 8:45	248	7/5/1994 8:45	42
2/6/1994 7:50	227	2/6/1994 7:50	20.8	7/6/1994 7:45	245	7/6/1994 7:45	42.8
2/7/1994 7:40	227	2/7/1994 7:40	20.9	7/7/1994 8:25	245	7/7/1994 8:25	41.1
2/8/1994 7:45	228	2/8/1994 7:45	24	7/8/1994 8:10	240	7/8/1994 8:10	42.9
2/9/1994 8:00	229	2/9/1994 8:00	24.2	7/9/1994 8:50	239	7/9/1994 8:50	43.2
2/10/1994 7:40	230	2/10/1994 7:40	24	7/10/1994 8:45	238	7/10/1994 8:45	41.5
2/11/1994 7:40	229	2/11/1994 7:40	24.2	7/11/1994 7:45	238	7/11/1994 7:45	41
2/12/1994 8:35	176.6	2/12/1994 8:35	18.35	7/12/1994 7:50	238	7/12/1994 7:50	41.6
2/13/1994 7:50	186.5	2/13/1994 7:50	18.27	7/13/1994 8:10	257	7/13/1994 8:10	41.4
2/14/1994 7:45	193.3	2/14/1994 7:45	18.5	7/14/1994 7:40	256	7/14/1994 7:40	42
2/15/1994 7:25	196	2/15/1994 7:25	19.3	7/15/1994 7:30	254	7/15/1994 7:30	42.2
2/16/1994 7:25	192	2/16/1994 7:25	18.4	7/16/1994 9:05	258	7/16/1994 9:05	41.8
2/17/1994 7:35	232	2/17/1994 7:35	24.3	7/17/1994 8:50	255	7/17/1994 8:50	41.4
2/18/1994 8:05	231	2/18/1994 8:05	23.6	7/17/1994 8:50	255	7/18/1994 7:50	41.4
2/19/1994 8:40	230	2/19/1994 8:40	24.9	7/18/1994 7:50	256	7/19/1994 7:35	40.9
2/20/1994 8:25	233	2/20/1994 8:25	24.7	7/19/1994 7:35	254	7/20/1994 8:25	41
2/21/1994 7:55	235	2/21/1994 7:55	24.4	7/20/1994 8:25	255	7/21/1994 8:20	41.8
2/22/1994 7:45	233	2/22/1994 7:45	24.5	7/21/1994 8:20	255	7/22/1994 7:55	40.2
2/23/1994 7:55	240	2/23/1994 7:55	22.6	7/22/1994 7:55	255	7/23/1994 8:50	40.4
2/24/1994 7:55	234	2/24/1994 7:55	22.3	7/23/1994 8:50	255	7/24/1994 8:35	39.6
2/25/1994 7:50	234	2/25/1994 7:50	22.6	7/24/1994 8:35	254	7/25/1994 7:45	39.8
2/26/1994 8:25	237	2/26/1994 8:25	29.6	7/25/1994 7:45	256	7/26/1994 7:30	41.7
2/27/1994 8:45	233	2/27/1994 8:45	22.6	7/26/1994 7:30	256	7/27/1994 8:00	43.2
2/28/1994 8:10	236	2/28/1994 8:10	22.3	7/27/1994 8:00	257	7/28/1994 8:05	42
3/1/1994 7:50	234	3/1/1994 7:50	22.6	7/28/1994 8:05	258	7/29/1994 7:40	41.7
3/2/1994 8:10	234	3/2/1994 8:10	24	7/29/1994 7:40	254	7/30/1994 7:20	43.2
3/3/1994 7:50	236	3/3/1994 7:50	23	7/30/1994 7:20	256	7/31/1994 8:35	42.1
3/4/1994 7:55	234	3/4/1994 7:55	23.1	7/31/1994 8:35	256	8/1/1994 7:55	41.4
3/5/1994 8:25	237	3/5/1994 8:25	23.2	8/1/1994 7:55	255	8/2/1994 8:55	42.1
3/6/1994 8:40	235	3/6/1994 8:40	21.6	8/2/1994 8:55	255	8/3/1994 8:30	42

Unit 1 Dissolved Oxygen (DO) Data - 1994				Unit 2 Dissolved Oxygen (DO) Data - 1994			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
3/7/1994 7:30	233	3/7/1994 7:30	25.9	8/3/1994 8:30	255	8/4/1994 8:10	41.9
3/8/1994 7:45	234	3/8/1994 7:45	26	8/4/1994 8:10	257	8/5/1994 8:45	42.6
3/9/1994 7:50	234	3/9/1994 7:50	25.7	8/5/1994 8:45	255	8/6/1994 8:50	40.1
3/10/1994 7:40	233	3/10/1994 7:40	25.8	8/6/1994 8:50	256	8/7/1994 9:25	40.9
3/11/1994 8:10	233	3/11/1994 8:10	24.9	8/7/1994 9:25	254	8/8/1994 8:00	40.8
3/12/1994 7:45	233	3/12/1994 7:45	25	8/8/1994 8:00	255	8/9/1994 7:40	40.4
3/13/1994 8:15	233	3/13/1994 8:15	24.9	8/9/1994 7:40	254	8/10/1994 9:00	42.8
3/14/1994 7:50	235	3/14/1994 7:50	26.4	8/10/1994 9:00	254	8/11/1994 7:50	43.8
3/15/1994 7:30	234	3/15/1994 7:30	27	8/11/1994 7:50	261	8/12/1994 8:45	44.4
3/16/1994 8:50	234	3/16/1994 8:50	26.1	8/12/1994 8:45	258	8/13/1994 8:30	22.5
3/17/1994 7:55	240	3/17/1994 7:55	26.2	8/13/1994 8:30	173	8/14/1994 8:20	43.3
3/18/1994 7:50	236	3/18/1994 7:50	27.6	8/14/1994 8:20	243	8/15/1994 7:45	43.8
3/19/1994 8:00	202	3/19/1994 8:00	20.4	8/15/1994 7:45	258	8/16/1994 7:50	44.7
3/20/1994 8:10	261	3/20/1994 8:10	26.6	8/16/1994 7:50	260	8/17/1994 7:35	45.5
3/21/1994 8:40	237	3/21/1994 8:40	26	8/17/1994 7:35	259	8/18/1994 7:45	45.8
3/22/1994 8:00	248	3/22/1994 8:00	27.3	8/18/1994 7:45	258	8/19/1994 7:55	45.5
3/23/1994 7:40	242	3/23/1994 7:40	27.2	8/19/1994 7:55	259	8/20/1994 8:40	45.8
3/24/1994 7:45	243	3/24/1994 7:45	25	8/20/1994 2:10	260	8/21/1994 8:40	46
3/25/1994 7:45	238	3/25/1994 7:45	23.5	8/20/1994 8:40	261	8/22/1994 7:55	44.2
3/26/1994 8:15	240	3/26/1994 8:15	26.6	8/21/1994 8:40	259	8/22/1994 7:55	44.2
3/27/1994 8:00	241	3/27/1994 8:00	25.8	8/22/1994 7:55	260	8/23/1994 7:35	43.1
3/28/1994 7:35	236	3/28/1994 7:35	25.5	8/23/1994 7:35	262	8/24/1994 8:20	44.4
3/29/1994 7:45	238	3/29/1994 7:45	26.2	8/24/1994 8:20	261	8/25/1994 8:00	44.9
3/30/1994 8:45	237	3/30/1994 8:45	26.9	8/25/1994 8:00	262	8/26/1994 7:25	45.2
3/31/1994 7:50	238	3/31/1994 7:50	25.9	8/26/1994 7:25	260	8/27/1994 8:30	43.7
4/1/1994 8:15	240	4/2/1994 8:40	26.5	8/27/1994 8:30	260	8/28/1994 8:10	45.4
4/2/1994 8:40	241	4/3/1994 8:35	26	8/28/1994 8:10	266	8/29/1994 7:35	43
4/3/1994 8:35	236	4/4/1994 8:45	26	8/29/1994 7:35	261	8/30/1994 8:05	42
4/4/1994 8:45	241	4/5/1994 8:00	28.8	8/30/1994 8:05	262	8/31/1994 7:35	43
4/5/1994 8:00	234	4/6/1994 7:50	30.1	8/31/1994 7:35	262	9/1/1994 7:45	43
4/6/1994 7:50	238	4/7/1994 8:00	26.2	9/1/1994 7:45	260	9/2/1994 8:00	43
4/7/1994 8:00	240	4/8/1994 7:45	25.4	9/2/1994 8:00	261	9/3/1994 6:00	41.4
4/8/1994 7:45	235	4/9/1994 8:05	25.8	9/3/1994 6:00	261	9/4/1994 8:10	42.7
4/9/1994 8:05	234	4/10/1994 8:00	25.8	9/4/1994 8:10	262	9/5/1994 9:40	42.1

Unit 1 Dissolved Oxygen (DO) Data - 1994				Unit 2 Dissolved Oxygen (DO) Data - 1994			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
4/10/1994 8:00	237	4/11/1994 8:25	25.6	9/5/1994 9:40	262	9/6/1994 7:40	45.3
4/11/1994 8:25	237	4/12/1994 8:00	26.3	9/6/1994 7:40	261	9/7/1994 7:50	46.9
4/12/1994 8:00	236	4/13/1994 7:45	26.4	9/7/1994 7:50	261	9/8/1994 7:45	41.3
4/13/1994 7:45	240	4/14/1994 7:50	26.3	9/8/1994 7:45	261	9/9/1994 7:55	46.1
4/14/1994 7:50	242	4/15/1994 8:25	29.5	9/9/1994 7:55	262	9/10/1994 7:55	42
4/15/1994 8:25	235	4/16/1994 8:30	25.9	9/10/1994 7:55	263	9/11/1994 8:00	42
4/16/1994 8:30	234	4/17/1994 8:15	25.5	9/11/1994 8:00	263	9/12/1994 7:45	41.5
4/17/1994 8:15	234	4/18/1994 7:25	25.4	9/12/1994 7:45	263	9/13/1994 9:05	41.9
4/18/1994 7:25	236	4/19/1994 7:45	26	9/13/1994 9:05	263	9/14/1994 8:05	43.2
4/19/1994 7:45	237	4/20/1994 0:00	25.2	9/14/1994 8:05	262	9/15/1994 7:45	42
4/20/1994 0:00	237	4/21/1994 7:40	25.3	9/15/1994 7:45	262	9/16/1994 7:40	42.6
4/21/1994 7:40	236	4/22/1994 7:55	25	9/16/1994 7:40	262	9/17/1994 9:15	42.5
4/22/1994 7:55	236	4/23/1994 7:45	21	9/17/1994 9:15	261	9/18/1994 7:45	41.1
4/23/1994 7:45	236	4/24/1994 8:00	21	9/18/1994 7:45	261	9/19/1994 7:40	40.7
4/24/1994 8:00	236	4/25/1994 7:55	22.1	9/19/1994 7:40	262	9/20/1994 7:50	39.8
4/25/1994 7:55	236	4/26/1994 7:50	22.2	9/20/1994 7:50	262	9/21/1994 8:15	41.1
4/26/1994 7:50	264	4/27/1994 7:50	22	9/21/1994 8:15	262	9/22/1994 7:40	41.9
4/27/1994 7:50	264	4/28/1994 8:05	20.8	9/22/1994 7:40	261	9/23/1994 7:45	41.8
4/28/1994 8:05	264	4/29/1994 7:50	21.2	9/23/1994 7:45	261	9/24/1994 9:50	43.3
4/29/1994 7:50	268	4/30/1994 8:35	20.9	9/24/1994 9:50	261	9/25/1994 9:25	41.9
4/30/1994 8:35	267			9/25/1994 9:25	261	9/26/1994 7:30	42
				9/26/1994 7:30	261	9/27/1994 7:25	41.7
				9/27/1994 7:25	261	9/28/1994 8:15	40.7
				9/28/1994 8:15	262	9/29/1994 7:35	41.3
				9/29/1994 7:35	262	9/30/1994 8:05	40.3
				9/30/1994 8:05	262		
AVERAGE =	234	AVERAGE =	24	AVERAGE =	256	AVERAGE =	42

Unit 1 Dissolved Oxygen (DO) Data - 1996				Unit 2 Dissolved Oxygen (DO) Data - 1996			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
1/1/1996 9:20	296	1/1/1996 9:20	28	1/1/1996 9:40	247	1/1/1996 9:40	26
1/2/1996 7:50	295	1/2/1996 7:50	27	1/2/1996 8:25	244	1/2/1996 8:25	25.6
1/3/1996 7:55	296	1/3/1996 7:55	26.5	1/3/1996 7:45	245	1/3/1996 7:45	25.4
1/4/1996 7:35	296	1/4/1996 7:35	27	1/4/1996 8:20	245	1/4/1996 8:20	25.1
1/5/1996 8:00	295	1/5/1996 8:00	26	1/5/1996 8:15	243	1/5/1996 8:15	25.4
1/6/1996 8:35	263	1/6/1996 8:35	26.3	1/6/1996 8:45	242	1/6/1996 8:45	25.4
1/7/1996 9:10	261	1/7/1996 9:10	26.5	1/7/1996 9:30	244	1/7/1996 9:30	25.9
1/8/1996 4:55	260	1/8/1996 4:55	27.2	1/8/1996 4:35	245	1/8/1996 4:35	25.7
1/9/1996 8:20	261	1/9/1996 8:20	26.6	1/9/1996 7:50	245	1/9/1996 7:50	25.4
1/10/1996 7:30	268	1/10/1996 7:30	27.3	1/10/1996 7:45	245	1/10/1996 7:45	25.7
1/11/1996 7:30	268	1/11/1996 7:30	26	1/11/1996 7:40	245	1/11/1996 7:40	25.4
1/12/1996 7:40	268	1/12/1996 7:40	27.7	1/12/1996 7:50	245	1/12/1996 7:50	26.2
1/13/1996 8:30	266	1/13/1996 8:30	26	1/13/1996 8:55	245	1/13/1996 8:55	25.7
1/14/1996 8:10	274	1/14/1996 8:10	28.4	1/14/1996 8:20	246	1/14/1996 8:20	26.1
1/15/1996 8:25	272	1/15/1996 8:25	27.6	1/15/1996 8:35	246	1/15/1996 8:35	26.3
1/16/1996 7:30	271	1/16/1996 7:30	25.9	1/16/1996 7:50	245	1/16/1996 7:50	25.7
1/17/1996 8:10	272	1/17/1996 8:10	32.9	1/17/1996 7:50	245	1/17/1996 7:50	25.9
1/18/1996 7:55	273	1/18/1996 7:55	29.7	1/18/1996 7:30	246	1/18/1996 7:30	27.2
1/19/1996 7:50	272	1/19/1996 7:50	29.5	1/19/1996 8:05	249	1/19/1996 8:05	30.2
1/20/1996 7:40	270	1/20/1996 7:40	27.1	1/20/1996 7:50	250	1/20/1996 7:40	29.1
1/21/1996 8:40	270	1/21/1996 8:40	27.2	1/21/1996 8:30	249	1/21/1996 8:30	25.8
1/22/1996 7:55	269	1/22/1996 7:55	26.9	1/22/1996 7:55	245	1/22/1996 7:55	25.4
1/23/1996 7:25	269	1/23/1996 7:25	27.3	1/23/1996 7:40	247	1/23/1996 7:40	25.7
1/24/1996 7:45	272	1/24/1996 7:45	28.7	1/24/1996 7:50	248	1/24/1996 7:50	27
1/25/1996 7:30	270	1/25/1996 7:30	27.2	1/25/1996 7:35	249	1/25/1996 7:35	30.1
1/26/1996 8:10	270	1/26/1996 8:10	27.5	1/26/1996 7:45	245	1/26/1996 7:45	29.7
1/27/1996 9:00	270	1/27/1996 9:00	29.7	1/27/1996 9:05	253	1/27/1996 9:05	35.3
1/28/1996 10:30	269	1/28/1996 10:30	28.9	1/28/1996 10:15	247	1/28/1996 10:15	28.1
1/29/1996 8:30	272	1/29/1996 8:30	27.9	1/29/1996 7:55	248	1/29/1996 7:55	30
1/30/1996 7:40	268	1/30/1996 7:40	29.1	1/30/1996 7:30	246	1/30/1996 7:30	30.6
1/31/1996 7:55	269	1/31/1996 7:55	27.6	1/31/1996 7:35	245	1/31/1996 7:35	28.4
2/1/1996 7:45	268	2/1/1996 7:45	26.5	2/1/1996 7:35	245	2/1/1996 7:35	28
2/2/1996 8:05	269	2/2/1996 8:05	27	2/2/1996 7:50	248	2/2/1996 7:50	29.7
2/3/1996 8:55	268	2/3/1996 8:55	27.2	2/3/1996 9:10	247	2/3/1996 9:10	28.6

Unit 1 Dissolved Oxygen (DO) Data - 1996				Unit 2 Dissolved Oxygen (DO) Data - 1996			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
2/4/1996 9:40	268	2/4/1996 9:40	27.1	2/4/1996 9:25	249	2/4/1996 9:25	28.4
2/5/1996 7:30	267	2/5/1996 7:30	26.1	2/5/1996 7:50	244	2/5/1996 7:50	28.2
2/6/1996 7:35	269	2/6/1996 7:35	26.5	2/6/1996 7:50	245	2/6/1996 7:50	28.4
2/7/1996 7:50	270	2/7/1996 7:50	27.7	2/7/1996 7:45	247	2/7/1996 7:45	30.3
2/8/1996 7:40	270	2/8/1996 7:40	28.8	2/8/1996 7:55	246	2/8/1996 7:55	31.3
2/9/1996 7:40	272	2/9/1996 7:40	29.3	2/9/1996 7:50	245	2/9/1996 7:50	31.1
2/10/1996 8:55	270	2/10/1996 8:55	27.9	2/10/1996 8:45	196	2/10/1996 8:45	21.5
2/11/1996 9:00	272	2/11/1996 9:00	29	2/11/1996 8:50	236	2/11/1996 8:50	25.9
2/12/1996 7:35	272	2/12/1996 7:35	26.6	2/12/1996 7:50	247	2/12/1996 7:50	25.8
2/13/1996 7:25	273	2/13/1996 7:25	25.9	2/13/1996 7:30	250	2/13/1996 7:30	25.5
2/14/1996 7:25	271	2/14/1996 7:25	26.9	2/14/1996 7:50	247	2/14/1996 7:50	23.7
2/15/1996 8:15	271	2/15/1996 8:15	27.7	2/15/1996 8:05	249	2/15/1996 8:05	25.8
2/16/1996 7:30	272	2/16/1996 7:30	26.6	2/16/1996 7:40	249	2/16/1996 7:40	26.1
2/17/1996 7:50	271	2/17/1996 7:50	26.7	2/17/1996 8:00	244	2/17/1996 8:00	25
2/18/1996 7:40	271	2/18/1996 7:40	27.4	2/18/1996 7:50	248	2/18/1996 7:50	26
2/19/1996 8:20	272	2/19/1996 8:20	27.4	2/19/1996 8:40	251	2/19/1996 8:40	26.1
2/20/1996 7:45	272	2/20/1996 7:45	29.3	2/20/1996 7:45	250	2/20/1996 7:45	27.1
2/21/1996 8:00	272	2/21/1996 8:00	30	2/21/1996 7:40	250	2/21/1996 7:40	28.6
2/22/1996 7:45	284	2/22/1996 7:45	30.8	2/22/1996 7:40	250	2/22/1996 7:40	27.6
2/23/1996 7:45	282	2/23/1996 7:45	31.2	2/23/1996 7:50	250	2/23/1996 7:50	27.5
2/24/1996 10:30	282	2/24/1996 10:30	29.7	2/24/1996 10:15	253	2/24/1996 10:15	28.6
2/25/1996 9:15	282	2/25/1996 9:15	30.5	2/25/1996 9:10	255	2/25/1996 9:10	28.9
2/26/1996 8:20	283	2/26/1996 8:20	34.8	2/26/1996 8:00	255	2/26/1996 8:00	29.8
2/27/1996 7:45	284	2/27/1996 7:45	33.4	2/27/1996 8:30	255	2/27/1996 8:30	29.8
2/28/1996 7:50	281	2/28/1996 7:50	35.1	2/28/1996 8:15	252	2/28/1996 8:15	29.9
2/29/1996 7:50	278	2/29/1996 7:50	27.2	2/29/1996 8:00	251	2/29/1996 8:00	29.4
3/1/1996 8:05	279	3/1/1996 8:05	27.1	3/1/1996 8:10	255	3/1/1996 8:10	27
3/2/1996 8:30	277	3/2/1996 8:30	29	3/2/1996 8:45	249	3/2/1996 8:45	26
3/3/1996 8:45	277	3/3/1996 8:45	27.7	3/3/1996 9:00	250	3/3/1996 9:00	27.4
3/4/1996 8:10	279	3/4/1996 8:10	31.9	3/4/1996 8:00	247	3/4/1996 8:00	26.7
3/5/1996 7:40	283	3/5/1996 7:40	36.1	3/5/1996 7:45	247	3/5/1996 7:45	27.6
3/6/1996 7:35	288	3/6/1996 7:35	36.9	3/6/1996 7:45	255	3/6/1996 7:45	28.1
3/7/1996 8:00	281	3/7/1996 8:00	35.3	3/7/1996 7:45	248	3/7/1996 7:45	27.2
3/8/1996 8:05	286	3/8/1996 8:05	27.2	3/8/1996 8:15	253	3/8/1996 8:15	27

Unit 1 Dissolved Oxygen (DO) Data - 1996				Unit 2 Dissolved Oxygen (DO) Data - 1996			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
3/9/1996 8:30	231	3/9/1996 8:30	22.3	3/9/1996 8:45	250	3/9/1996 8:45	26.6
3/10/1996 8:35	272	3/10/1996 8:35	27.1	3/10/1996 8:45	245	3/10/1996 8:45	26.8
3/11/1996 7:50	278	3/11/1996 7:50	27.1	3/11/1996 8:10	244	3/11/1996 8:10	26.3
3/12/1996 7:35	284	3/12/1996 7:35	27.5	3/12/1996 8:10	244	3/12/1996 8:10	26.9
3/13/1996 9:00	282	3/13/1996 9:00	27.2	3/13/1996 8:45	245	3/13/1996 8:45	27.2
3/14/1996 7:25	284	3/14/1996 7:25	29.7	3/14/1996 7:55	244	3/14/1996 7:55	27.1
3/15/1996 9:10	284	3/15/1996 9:10	30.1	3/15/1996 8:55	243	3/15/1996 8:55	28.4
3/16/1996 8:55	288	3/16/1996 8:55	26.8	3/16/1996 9:05	249	3/16/1996 9:05	25.5
3/17/1996 8:55	283	3/17/1996 8:55	27	3/17/1996 9:00	241	3/17/1996 9:00	26.2
3/18/1996 7:50	282	3/18/1996 7:50	27.5	3/18/1996 8:25	241	3/18/1996 8:25	26.7
3/19/1996 7:25	281	3/19/1996 7:25	28.1	3/19/1996 8:25	243	3/19/1996 8:25	27.4
3/20/1996 7:40	281	3/20/1996 7:40	27.9	3/20/1996 8:05	242	3/20/1996 8:05	26.7
3/21/1996 7:30	281	3/21/1996 7:30	27.5	3/21/1996 7:30	242	3/21/1996 7:30	25.5
3/22/1996 7:40	277	3/22/1996 7:40	25.8	3/22/1996 7:50	241	3/22/1996 7:50	26.4
3/23/1996 9:10	277	3/23/1996 9:10	26.1	3/23/1996 9:10	240	3/23/1996 9:10	25.6
3/24/1996 9:30	278	3/24/1996 9:30	26.9	3/24/1996 8:50	242	3/24/1996 8:50	25.9
3/25/1996 8:20	283	3/25/1996 8:20	28.1	3/25/1996 7:45	242	3/25/1996 7:45	27
3/26/1996 7:30	280	3/26/1996 7:30	26.8	3/26/1996 7:25	243	3/26/1996 7:25	26
3/27/1996 7:40	280	3/27/1996 7:40	25.8	3/27/1996 7:35	244	3/27/1996 7:35	26.2
3/28/1996 7:35	280	3/28/1996 7:35	26.9	3/28/1996 7:45	242	3/28/1996 7:45	26
3/29/1996 7:45	280	3/29/1996 7:45	28	3/29/1996 7:40	241	3/29/1996 7:40	26.5
3/30/1996 8:45	282	3/30/1996 8:45	29	3/30/1996 8:30	245	3/30/1996 8:30	26.2
3/31/1996 8:55	282	3/31/1996 8:55	28.8	3/31/1996 9:05	247	3/31/1996 9:05	28
AVERAGE =	275	AVERAGE =	28	AVERAGE =	246	AVERAGE =	27

Unit 1 Dissolved Oxygen (DO) Data - 1998				Unit 2 Dissolved Oxygen (DO) Data - 1998			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
1/1/98 8:15	278	1/1/1998 8:15	23.6	1/1/98 8:25	254	1/1/98 8:25	20.5
1/2/98 7:50	279	1/2/1998 7:50	24.9	1/2/98 8:05	254	1/2/98 8:05	21.6
1/3/98 9:35	280	1/3/1998 9:35	26.4	1/3/98 9:20	254	1/3/98 9:20	22.1
1/4/98 8:50	280	1/4/1998 8:50	26.3	1/4/98 8:40	254	1/4/98 8:40	22
1/5/98 7:55	283	1/5/1998 7:55	26.1	1/5/98 7:55	254	1/5/98 7:55	22.8
1/6/98 8:40	283	1/6/1998 8:40	27.4	1/6/98 7:30	254	1/6/98 7:30	24.3
1/7/98 8:15	282	1/7/1998 8:15	27.9	1/7/98 8:05	253	1/7/98 8:05	25.2
1/8/98 8:05	277	1/8/1998 8:05	28.7	1/8/98 7:50	253	1/8/98 7:50	26.1
1/9/98 9:00	277	1/9/1998 9:00	26.3	1/9/98 8:35	253	1/9/98 8:35	25.1
1/10/98 10:45	276	1/10/1998 10:45	23.7	1/10/98 10:30	213	1/10/98 10:30	17.12
1/11/98 5:00	277	1/11/1998 5:00	23.3	1/11/98 8:35	242	1/11/98 8:35	20.3
1/12/98 7:55	280	1/12/1998 7:55	23.5	1/12/98 8:05	248	1/12/98 8:05	21
1/13/98 7:25	280	1/13/1998 7:25	24.9	1/13/98 7:30	248	1/13/98 7:30	21.7
1/14/98 7:40	283	1/14/1998 7:40	23.5	1/14/98 7:40	248	1/14/98 7:40	20.2
1/15/98 8:00	283	1/15/1998 8:00	23.9	1/15/98 7:35	248	1/15/98 7:35	21
1/16/98 7:45	283	1/16/1998 7:45	24.3	1/16/98 7:50	248	1/16/98 7:50	21.5
1/17/98 8:30	285	1/17/1998 8:30	23	1/17/98 8:40	247	1/17/98 8:40	20.5
1/18/98 8:10	285	1/18/1998 8:10	22.2	1/18/98 8:20	248	1/18/98 8:20	20.5
1/19/98 8:00	280	1/19/1998 8:00	23	1/19/98 8:00	249	1/19/98 8:00	20.4
1/20/98 7:40	302	1/20/1998 7:40	23.8	1/20/98 7:30	258	1/20/98 7:30	20.7
1/21/98 8:30	312	1/21/1998 8:30	24.6	1/21/98 8:15	297	1/21/98 8:15	21.1
1/22/98 7:35	280	1/22/1998 7:35	25	1/22/98 7:35	255	1/22/98 7:35	21.6
1/23/98 8:00	280	1/23/1998 8:00	24.4	1/23/98 8:00	252	1/23/98 8:00	21.6
1/24/98 8:20	281	1/24/1998 8:20	24.8	1/24/98 8:30	249	1/24/98 8:30	21.5
1/25/98 8:05	279	1/25/1998 8:05	23.3	1/25/98 11:35	249	1/25/98 11:35	21.1
1/26/98 8:10	281	1/26/1998 8:10	24.6	1/26/98 8:20	249	1/26/98 8:20	21.5
1/27/98 7:40	281	1/27/1998 7:40	25.2	1/27/98 8:10	193	1/27/98 8:10	15.4
1/28/98 8:25	281	1/28/1998 8:25	24.3	1/28/98 9:15	224	1/28/98 9:15	18.9
1/29/98 8:10	281	1/29/1998 8:10	24.7	1/29/98 8:40	253	1/29/98 8:40	21.5
1/30/98 7:52	284	1/30/1998 7:52	25.3	1/30/98 8:50	253	1/30/98 8:50	22.1
1/31/98 8:05	281	1/31/1998 8:05	24.2	1/31/98 8:15	254	1/31/98 8:15	21.2
2/1/98 9:20	281	2/1/1998 9:20	24.8	2/1/98 9:30	255	2/1/98 9:30	21.7
2/2/98 8:00	282	2/2/1998 8:00	25.9	2/2/98 7:45	254	2/2/98 7:45	21.5
2/3/98 7:35	281	2/3/1998 7:35	24.1	2/3/98 8:25	254	2/3/98 8:25	21.4

Unit 1 Dissolved Oxygen (DO) Data - 1998				Unit 2 Dissolved Oxygen (DO) Data - 1998			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
2/4/98 8:15	281	2/4/1998 8:15	24.5	2/4/98 8:10	253	2/4/98 8:10	21.7
2/5/98 8:00	283	2/5/1998 8:00	25.2	2/5/98 7:45	253	2/5/98 7:45	22.3
2/6/98 8:00	284	2/6/1998 8:00	23	2/6/98 8:05	253	2/6/98 8:05	20.7
2/7/98 8:00	256	2/7/1998 8:00	21.4	2/7/98 8:15	253	2/7/98 8:15	22.1
2/8/98 7:30	275	2/8/1998 7:30	24.6	2/8/98 7:35	253	2/8/98 7:35	21.9
2/9/98 7:45	280	2/9/1998 7:45	24.8	2/9/98 8:10	253	2/9/98 8:10	23.9
2/10/98 7:25	276	2/10/1998 7:25	23.7	2/10/98 8:10	252	2/10/98 8:10	22.1
2/11/98 7:55	278	2/11/1998 7:55	24.1	2/11/98 7:40	250	2/11/98 7:40	21.7
2/12/98 8:00	282	2/12/1998 8:00	25.9	2/12/98 7:50	250	2/12/98 7:50	23.3
2/13/98 7:35	279	2/13/1998 7:35	24.2	2/13/98 8:20	248	2/13/98 8:20	21.2
2/14/98 7:45	281	2/14/1998 7:45	24.1	2/14/98 7:55	248	2/14/98 7:55	21.3
2/15/98 7:30	280	2/15/1998 7:30	23.4	2/15/98 7:45	248	2/15/98 7:45	20.9
2/16/98 8:10	280	2/16/1998 8:10	24.9	2/16/98 8:10	249	2/16/98 8:10	21.7
2/17/98 7:45	282	2/17/1998 7:45	24.9	2/17/98 8:05	249	2/17/98 8:05	28
2/18/98 8:40	284	2/18/1998 8:40	25.8	2/18/98 8:50	248	2/18/98 8:50	22.5
2/19/98 7:45	285	2/19/1998 7:45	25.8	2/19/98 7:35	248	2/19/98 7:35	22.5
2/20/98 9:05	287	2/20/1998 9:05	25.7	2/20/98 9:20	248	2/20/98 9:20	22.1
2/21/98 8:15	279	2/21/1998 8:15	25.7	2/20/98 9:20	248	2/21/98 8:30	22
2/22/98 9:30	278	2/22/1998 9:30	24.9	2/21/98 8:30	248	2/22/98 9:50	21.9
2/23/98 8:25	278	2/23/1998 8:25	24.4	2/22/98 9:50	248	2/23/98 7:55	21.4
2/24/98 7:57	279	2/24/1998 7:57	22.5	2/23/98 7:55	248	2/24/98 7:45	21.1
2/25/98 7:47	280	2/25/1998 7:47	22.8	2/24/98 7:45	249	2/25/98 7:40	21.8
2/26/98 7:35	279	2/26/1998 7:35	22.7	2/25/98 7:40	248	2/26/98 7:30	24.1
2/27/98 7:55	277	2/27/1998 7:55	22.7	2/26/98 7:30	250	2/27/98 7:40	21.1
2/28/98 8:35	278	2/28/1998 8:35	23.7	2/27/98 7:40	249	2/28/98 8:50	22.7
3/1/98 8:15	279	3/1/1998 8:15	23.6	2/28/98 8:50	249	3/1/98 8:25	22.3
3/2/98 7:50	278	3/2/1998 7:50	22.5	3/1/98 8:25	249	3/2/98 7:55	21.2
3/3/98 7:55	281	3/3/1998 7:55	23	3/2/98 7:55	248	3/3/98 7:55	21.1
3/4/98 7:45	278	3/4/1998 7:45	24	3/3/98 7:55	248	3/4/98 7:45	21.3
3/5/98 8:00	270	3/5/1998 8:00	23.5	3/4/98 7:45	248	3/5/98 8:00	21
3/6/98 8:05	270	3/6/1998 8:05	23	3/5/98 8:00	247	3/6/98 8:10	21
3/7/98 8:55	271	3/7/1998 8:55	24.6	3/6/98 8:10	248	3/7/98 9:05	19.3
3/8/98 8:15	271	3/8/1998 8:15	24.9	3/7/98 9:05	237	3/8/98 8:25	22.1
3/9/98 8:20	272	3/9/1998 8:20	26.2	3/8/98 8:25	254	3/9/98 8:00	23.7

Unit 1 Dissolved Oxygen (DO) Data - 1998				Unit 2 Dissolved Oxygen (DO) Data - 1998			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
3/10/98 7:35	273	3/10/1998 7:35	24.4	3/9/98 8:00	256	3/10/98 9:30	21.5
3/11/98 8:25	273	3/11/1998 8:25	22.8	3/10/98 9:30	257	3/11/98 8:20	21.3
3/12/98 8:20	274	3/12/1998 8:20	23.2	3/11/98 8:20	257	3/12/98 8:20	21.4
3/13/98 7:55	274	3/13/1998 7:55	23.8	3/12/98 8:20	257	3/13/98 8:00	19.5
3/14/98 8:50	275	3/14/1998 8:50	24.7	3/13/98 8:00	257	3/14/98 9:05	19.5
3/15/98 7:35	276	3/15/1998 7:35	25.5	3/14/98 9:05	257	3/15/98 7:45	22.9
3/16/98 8:10	271	3/16/1998 8:10	24.2	3/15/98 7:45	257	3/16/98 7:40	19.7
3/17/98 7:35	271	3/17/1998 7:35	24.2	3/16/98 7:40	256	3/17/98 7:35	22
3/18/98 9:00	270	3/18/1998 9:00	24.1	3/17/98 7:35	256	3/18/98 8:30	21.9
3/19/98 7:45	270	3/19/1998 7:45	24.4	3/18/98 8:30	256	3/19/98 7:25	22.1
3/20/98 8:30	270	3/20/1998 8:30	24.7	3/19/98 7:25	255	3/20/98 7:25	22.5
3/21/98 8:20	272	3/21/1998 8:20	24.2	3/20/98 7:25	256	3/21/98 8:10	23.3
3/22/98 7:40	271	3/22/1998 7:40	23.6	3/21/98 8:10	256	3/22/98 7:30	21.1
3/23/98 7:45	273	3/23/1998 7:45	23.2	3/22/98 7:30	256	3/23/98 7:50	21.1
3/24/98 7:40	274	3/24/1998 7:40	23.1	3/23/98 7:50	255	3/24/98 7:35	21.1
3/25/98 7:55	273	3/25/1998 7:55	23.7	3/24/98 7:35	255	3/25/98 7:55	21.7
3/26/98 7:50	275	3/26/1998 7:50	24.5	3/25/98 7:55	259	3/26/98 7:35	22.3
3/27/98 8:30	275	3/27/1998 8:30	25.8	3/26/98 7:35	255	3/27/98 7:55	24.8
3/28/98 10:40	274	3/28/1998 10:40	27.2	3/27/98 7:55	256	3/28/98 10:50	26.5
3/29/98 8:00	273	3/29/1998 8:00	26.4	3/28/98 10:50	254	3/29/98 8:10	36.4
3/30/98 7:45	273	3/30/1998 7:45	25.5	3/29/98 8:10	256	3/30/98 8:05	25.1
3/31/98 7:45	272	3/31/1998 7:45	25.7	3/30/98 8:05	253	3/31/98 8:00	25.7
				3/31/98 8:00	253		
AVERAGE =	278	AVERAGE =	24	AVERAGE =	251	AVERAGE =	22

Unit 1 Dissolved Oxygen (DO) Data - 2000				Unit 2 Dissolved Oxygen (DO) Data - 2000			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
6/1/2000 7:35	0.13	6/1/2000 7:35	49.7	6/1/2000 7:30	0.42	6/1/2000 7:30	36.2
6/2/2000 7:30	0.14	6/2/2000 7:30	47.9	6/2/2000 7:35	0.42	6/2/2000 7:35	34.1
6/3/2000 8:30	0.15	6/3/2000 8:30	52	6/3/2000 8:15	0.37	6/3/2000 8:15	35.5
6/4/2000 8:05	0.13	6/4/2000 8:05	50.2	6/4/2000 7:55	0.38	6/4/2000 7:55	37.1
6/5/2000 8:00	0.14	6/5/2000 8:00	50.3	6/5/2000 8:15	0.36	6/5/2000 8:15	35.7
6/6/2000 7:30	0.15	6/6/2000 7:30	49.9	6/6/2000 7:45	0.36	6/6/2000 7:45	34.8
6/7/2000 8:30	0.18	6/7/2000 8:30	52.5	6/7/2000 8:15	0.48	6/7/2000 8:15	33.9
6/8/2000 8:05	0.18	6/8/2000 8:05	51.9	6/8/2000 8:20	0.57	6/8/2000 8:20	31.4
6/9/2000 7:35	0.19	6/9/2000 7:35	50.6	6/9/2000 8:20	0.68	6/9/2000 8:20	32.7
6/10/2000 9:35	0.19	6/10/2000 9:35	51.7	6/10/2000 9:45	0.71	6/10/2000 9:45	32.4
6/11/2000 7:45	0.2	6/11/2000 7:45	47	6/11/2000 8:00	0.74	6/11/2000 8:00	33.7
6/12/2000 7:35	0.18	6/12/2000 7:35	48.5	6/12/2000 7:55	0.75	6/12/2000 7:55	32.8
6/13/2000 7:45	0.16	6/13/2000 7:45	51.3	6/13/2000 7:40	0.74	6/13/2000 7:40	33.8
6/14/2000 7:58	0.17	6/14/2000 7:58	51.8	6/14/2000 8:00	0.72	6/14/2000 8:00	33.9
6/15/2000 8:35	0.15	6/15/2000 8:35	48.9	6/15/2000 8:35	0.73	6/15/2000 8:35	31.9
6/16/2000 8:48	0.14	6/16/2000 8:48	48.2	6/16/2000 8:50	0.71	6/16/2000 8:50	32.4
6/17/2000 8:50	0.17	6/17/2000 8:50	46.6	6/17/2000 9:00	0.73	6/17/2000 9:00	34.9
6/18/2000 8:45	0.17	6/18/2000 8:45	52.4	6/18/2000 9:05	0.81	6/18/2000 9:05	35
6/19/2000 7:50	0.16	6/19/2000 7:50	52.1	6/19/2000 13:19	0.66	6/19/2000 13:19	34.1
6/20/2000 7:45	0.17	6/20/2000 7:45	49.5	6/20/2000 8:20	0.66	6/20/2000 8:20	33.6
6/21/2000 7:35	0.12	6/21/2000 7:35	49.4	6/21/2000 8:15	0.54	6/21/2000 8:15	34.5
6/22/2000 8:00	0.12	6/22/2000 8:00	47.6	6/22/2000 8:00	0.54	6/22/2000 8:00	33
6/23/2000 8:15	0.11	6/23/2000 8:15	50.8	6/23/2000 8:20	0.55	6/23/2000 8:20	33.6
6/24/2000 8:20	0.19	6/24/2000 8:20	50.9	6/24/2000 9:50	0.58	6/24/2000 9:50	34.6
6/25/2000 8:25	0.12	6/25/2000 8:25	48.4	6/25/2000 8:15	0.59	6/25/2000 8:15	35
6/26/2000 7:45	0.17	6/26/2000 7:45	48.6	6/26/2000 7:55	0.62	6/26/2000 7:55	36
6/27/2000 7:30	0.29	6/27/2000 7:30	48.3	6/27/2000 7:40	0.6	6/27/2000 7:40	35.4
6/28/2000 8:20	0.15	6/28/2000 8:20	49.4	6/28/2000 8:05	0.7	6/28/2000 8:05	37.3
6/29/2000 7:40	0.13	6/29/2000 7:40	49.8	6/29/2000 7:40	0.67	6/29/2000 7:40	37.7
6/30/2000 7:45	0.13	6/30/2000 7:45	50.8	6/30/2000 7:45	0.65	6/30/2000 7:45	37.4
7/1/2000 8:30	0.15	7/1/2000 8:30	49.1	7/1/2000 8:45	2.53	7/1/2000 8:45	36.6
7/2/2000 8:20	0.13	7/2/2000 8:20	50	7/2/2000 8:35	2.39	7/2/2000 8:35	36.6
7/3/2000 8:15	0.16	7/3/2000 8:15	49	7/3/2000 9:15	1.65	7/3/2000 9:15	38.5
7/4/2000 8:15	0.19	7/4/2000 8:15	49.7	7/4/2000 8:00	2.51	7/4/2000 8:00	36

Unit 1 Dissolved Oxygen (DO) Data - 2000				Unit 2 Dissolved Oxygen (DO) Data - 2000			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
7/5/2000 7:55	0.18	7/5/2000 7:55	50.7	7/5/2000 8:05	2.42	7/5/2000 8:05	35.4
7/6/2000 7:50	0.19	7/6/2000 7:50	44.6	7/6/2000 8:20	1.83	7/6/2000 8:20	32.5
7/7/2000 7:55	0.25	7/7/2000 7:55	44.2	7/7/2000 8:10	1.93	7/7/2000 8:10	34.6
7/8/2000 9:40	0.34	7/8/2000 9:40	44.6	7/8/2000 9:30	1.97	7/8/2000 9:30	33.4
7/9/2000 9:35	0.55	7/9/2000 9:35	43.8	7/9/2000 9:25	2.03	7/9/2000 9:25	35.7
7/10/2000 7:50	0.42	7/10/2000 7:50	41.3	7/10/2000 8:00	2.22	7/10/2000 8:00	32.1
7/11/2000 8:50	0.31	7/11/2000 8:50	44.8	7/11/2000 8:05	0.59	7/11/2000 8:05	34.5
7/12/2000 9:00	0.32	7/12/2000 9:00	49.3	7/12/2000 8:30	0.88	7/12/2000 8:30	31.4
7/13/2000 7:45	0.68	7/13/2000 7:45	49.7	7/13/2000 8:05	1.21	7/13/2000 8:05	31.9
7/14/2000 7:35	0.29	7/14/2000 7:35	46.3	7/14/2000 8:00	1.31	7/14/2000 8:00	33.7
7/15/2000 8:20	0.3	7/15/2000 8:20	45.7	7/15/2000 8:15	1.43	7/15/2000 8:15	31.8
7/16/2000 8:15	0.35	7/16/2000 8:15	44.9	7/16/2000 8:25	1.59	7/16/2000 8:25	33.5
7/17/2000 8:00	0.35	7/17/2000 8:00	44.3	7/17/2000 7:50	1.76	7/17/2000 7:50	32.6
7/17/2000 8:00	0.35	7/17/2000 8:00	44.3	7/18/2000 7:40	2.18	7/18/2000 7:40	34.5
7/18/2000 7:35	0.39	7/18/2000 7:35	43.2	7/19/2000 7:45	2.43	7/19/2000 7:45	44.9
7/19/2000 8:25	0.32	7/19/2000 8:25	44.3	7/20/2000 7:45	2.76	7/20/2000 7:45	41.3
7/20/2000 7:55	0.28	7/20/2000 7:55	44.2	7/21/2000 8:10	3.18	7/21/2000 8:10	44.4
7/21/2000 7:35	0.27	7/21/2000 7:35	41.9	7/22/2000 9:45	11.78	7/22/2000 9:45	36.8
7/22/2000 9:35	0.27	7/22/2000 9:35	44.8	7/23/2000 9:10	9.07	7/23/2000 9:10	36.7
7/23/2000 9:30	0.28	7/23/2000 9:30	45.4	7/24/2000 7:55	0.31	7/24/2000 7:55	45.8
7/24/2000 7:40	0.28	7/24/2000 7:40	43.6	7/25/2000 7:30	0.25	7/25/2000 7:30	44.6
7/25/2000 8:05	0.29	7/25/2000 8:05	44.9	7/26/2000 8:20	0.25	7/26/2000 8:20	46.9
7/26/2000 8:40	0.28	7/26/2000 8:40	43.7	7/27/2000 7:40	0.25	7/27/2000 7:40	44.4
7/27/2000 7:45	0.29	7/27/2000 7:45	43.4	7/28/2000 7:45	0.26	7/28/2000 7:45	44.4
7/28/2000 7:40	0.29	7/28/2000 7:40	39.7	7/29/2000 8:25	0.27	7/29/2000 8:25	45.2
7/29/2000 9:05	0.3	7/29/2000 9:05	41.9	7/30/2000 9:05	0.31	7/30/2000 9:05	43.5
7/30/2000 9:20	0.29	7/30/2000 9:20	39.4	7/31/2000 7:45	0.32	7/31/2000 7:45	42.6
7/31/2000 8:05	0.3	7/31/2000 8:05	43.5	8/1/2000 7:55	0.33	8/1/2000 7:55	47.5
8/1/2000 8:25	0.29	8/1/2000 8:25	41.6	8/2/2000 7:35	0.34	8/2/2000 7:35	45
8/2/2000 7:45	0.28	8/2/2000 7:45	41.9	8/3/2000 7:50	0.37	8/3/2000 7:50	46.6
8/3/2000 8:15	0.29	8/3/2000 8:15	40.7	8/4/2000 7:40	0.4	8/4/2000 7:40	46.9
8/4/2000 8:15	0.29	8/4/2000 8:15	42.1	8/5/2000 8:45	0.59	8/5/2000 8:45	45.5
8/5/2000 8:55	0.17	8/5/2000 8:55	46.2	8/6/2000 8:05	0.6	8/6/2000 8:05	44.4
8/6/2000 7:55	0.17	8/6/2000 7:55	47	8/7/2000 8:00	0.59	8/7/2000 8:00	42.9

Unit 1 Dissolved Oxygen (DO) Data - 2000				Unit 2 Dissolved Oxygen (DO) Data - 2000			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
8/7/2000 7:50	0.21	8/7/2000 7:50	45	8/8/2000 8:10	0.75	8/8/2000 8:10	43.8
8/8/2000 8:30	0.23	8/8/2000 8:30	45	8/9/2000 8:10	0.82	8/9/2000 8:10	48
8/9/2000 9:15	0.25	8/9/2000 9:15	44.8	8/10/2000 8:30	0.89	8/10/2000 8:30	48.5
8/10/2000 10:10	0.22	8/10/2000 10:10	46.6	8/11/2000 7:35	1.03	8/11/2000 7:35	49.7
8/11/2000 8:00	0.2	8/11/2000 8:00	45	8/12/2000 7:45	0.99	8/12/2000 7:45	48.5
8/12/2000 8:00	0.21	8/12/2000 8:00	45.8	8/13/2000 7:45	1.05	8/13/2000 7:45	46.3
8/13/2000 7:55	0.22	8/13/2000 7:55	45.5	8/14/2000 7:40	0.46	8/14/2000 7:40	41.9
8/14/2000 8:00	0.22	8/14/2000 8:00	48.6	8/15/2000 7:35	0.43	8/15/2000 7:35	45.2
8/15/2000 7:45	0.23	8/15/2000 7:45	46.7	8/16/2000 8:00	0.53	8/16/2000 8:00	50.7
8/15/2000 7:45	0.23	8/15/2000 7:45	46.7	8/17/2000 8:10	**230***	8/17/2000 8:10	26.6
8/16/2000 8:10	0.23	8/16/2000 8:10	45.8	8/24/2000 8:20	15.8	8/24/2000 8:20	88.2
8/17/2000 8:00	0.29	8/17/2000 8:00	46.1	8/25/2000 8:20	**262***	8/25/2000 8:20	43
8/18/2000 8:05	0.38	8/18/2000 8:05	47.4	8/26/2000 8:30	**256***	8/26/2000 8:30	27.8
8/19/2000 8:40	0.3	8/19/2000 8:40	46.5	8/27/2000 12:50	6.9	8/27/2000 12:50	33.6
8/20/2000 9:05	0.22	8/20/2000 9:05	47.7	8/28/2000 8:05	1.77	8/28/2000 8:05	58
8/21/2000 8:10	0.2	8/21/2000 8:10	47.6	8/29/2000 8:00	0.55	8/29/2000 8:00	57
8/22/2000 7:40	1.26	8/22/2000 7:40	48.4	8/30/2000 8:20	0.04	8/30/2000 8:20	53.7
8/23/2000 8:50	0.25	8/23/2000 8:50	44.5	8/31/2000 8:00	0.02	8/31/2000 8:00	55.6
8/24/2000 7:55	0.26	8/24/2000 7:55	45.9				
8/25/2000 8:25	0.21	8/25/2000 8:25	47.6				
8/26/2000 8:10	0.19	8/26/2000 8:10	48.6				
8/27/2000 8:40	0.19	8/27/2000 8:40	48				
8/28/2000 8:10	0.21	8/28/2000 8:10	50.2				
8/29/2000 8:03	0.2	8/29/2000 8:03	48.5				
8/30/2000 8:00	0.18	8/30/2000 8:00	48.3				
8/31/2000 8:10	0.19	8/31/2000 8:10	47				
AVERAGE =	0.24	AVERAGE =	47	AVERAGE =	10.06*	AVERAGE =	39

* Note that the Unit 2 Reactor Water DO values on 8/17, 8/25, and 8/26 (in bold) are > 200, indicating that hydrogen water chemistry (HWC) was out of service on these days. For this data sample, that is only 3 days out of the 3-month sample period when HWC was not in-service. This supports the assumption that HWC is in-service 90% of the time.

Unit 1 Dissolved Oxygen (DO) Data - 2004				Unit 2 Dissolved Oxygen (DO) Data - 2004			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
5/1/2004 8:05	0.16	5/1/2004 8:05	40	6/1/2004 7:35	0.54	6/1/2004 7:35	37.2
5/2/2004 8:45	0.38	5/2/2004 8:45	38.7	6/2/2004 7:50	0.56	6/2/2004 7:50	40
5/3/2004 8:00	0.58	5/3/2004 8:00	37.9	6/3/2004 8:10	0.5	6/3/2004 8:10	39.1
5/4/2004 7:45	1.12	5/4/2004 7:45	39.4	6/4/2004 8:10	0.48	6/4/2004 8:10	37.5
5/5/2004 9:10	1.11	5/5/2004 9:10	38.5	6/5/2004 9:40	0.53	6/5/2004 9:40	38.6
5/6/2004 7:45	1.08	5/6/2004 7:45	42.9	6/6/2004 9:40	0.43	6/6/2004 9:40	41
5/7/2004 8:25	1.13	5/7/2004 8:25	38.5	6/7/2004 8:00	0.42	6/7/2004 8:00	36.9
5/8/2004 8:45	1.42	5/8/2004 8:45	36	6/8/2004 8:00	0.46	6/8/2004 8:00	38.7
5/9/2004 8:45	1.2	5/9/2004 8:45	38.7	6/9/2004 8:30	0.53	6/9/2004 8:30	40.6
5/10/2004 8:15	1.15	5/10/2004 8:15	39.6	6/10/2004 8:00	0.55	6/10/2004 8:00	40.3
5/11/2004 8:00	1.02	5/11/2004 8:00	37	6/11/2004 7:55	0.51	6/11/2004 7:55	42
5/12/2004 8:40	1.06	5/12/2004 8:40	36.6	6/12/2004 9:00	0.48	6/12/2004 9:00	43.5
5/13/2004 8:50	0.99	5/13/2004 8:50	33.8	6/13/2004 9:15	0.46	6/13/2004 9:15	39.3
5/14/2004 8:30	1	5/14/2004 8:30	38.5	6/14/2004 7:50	0.37	6/14/2004 7:50	43.8
5/15/2004 8:20	0.8	5/15/2004 8:20	38	6/15/2004 8:35	0.39	6/15/2004 8:35	42.3
5/16/2004 8:15	0.96	5/16/2004 8:15	38	6/16/2004 8:30	0.31	6/16/2004 8:30	41.1
5/17/2004 8:15	1.16	5/17/2004 8:15	38	6/17/2004 8:20	0.36	6/17/2004 8:20	37.8
5/18/2004 7:50	1.31	5/18/2004 7:50	36	6/18/2004 8:05	0.26	6/18/2004 8:05	41.9
5/19/2004 7:55	1.95	5/19/2004 7:55	39.7	6/19/2004 9:10	0.3	6/19/2004 9:10	42.9
5/20/2004 8:10	1.11	5/20/2004 8:10	42.2	6/20/2004 11:55	0.36	6/20/2004 11:55	42
5/21/2004 8:10	1.12	5/21/2004 8:10	38.8	6/21/2004 8:05	0.41	6/21/2004 8:05	43.7
5/22/2004 7:45	1.42	5/22/2004 7:45	37.3	6/22/2004 7:45	0.38	6/22/2004 7:45	38.1
5/23/2004 8:20	1.37	5/23/2004 8:20	32.2	6/23/2004 7:45	0.34	6/23/2004 7:45	38.6
5/24/2004 8:25	1.43	5/24/2004 8:25	40.1	6/24/2004 7:55	0.44	6/24/2004 7:55	42.3
5/25/2004 7:35	1.56	5/25/2004 7:35	39.5	6/25/2004 8:05	0.4	6/25/2004 8:05	39.9
5/26/2004 8:10	1.7	5/26/2004 8:10	37.5	6/26/2004 8:40	4.12	6/26/2004 8:40	62.4
5/27/2004 8:15	1.89	5/27/2004 8:15	39.6	6/27/2004 9:00	0.38	6/27/2004 9:00	44.9
5/28/2004 8:20	2.2	5/28/2004 8:20	34.2	6/28/2004 8:00	0.35	6/28/2004 8:00	41.2
5/29/2004 8:50	2.26	5/29/2004 8:50	41.5	6/29/2004 7:40	0.32	6/29/2004 7:40	38.3
5/30/2004 8:05	2.02	5/30/2004 8:05	42	6/30/2004 8:15	0.34	6/30/2004 8:15	38.7
5/31/2004 9:15	2.15	5/31/2004 9:15	40	7/1/2004 7:45	0.36	7/1/2004 7:45	41.3
6/1/2004 7:45	1.56	6/1/2004 7:45	38.5	7/2/2004 7:55	0.36	7/2/2004 7:55	38.9
6/2/2004 8:05	1.77	6/2/2004 8:05	44.8	7/3/2004 11:00	0.43	7/3/2004 11:00	40
6/3/2004 7:50	1.97	6/3/2004 7:50	43	7/4/2004 8:15	0.48	7/4/2004 8:15	42.1

Unit 1 Dissolved Oxygen (DO) Data - 2004				Unit 2 Dissolved Oxygen (DO) Data - 2004			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
6/4/2004 8:05	2.14	6/4/2004 8:05	36.4	7/5/2004 8:30	0.48	7/5/2004 8:30	40.5
6/5/2004 9:30	2.32	6/5/2004 9:30	35	7/6/2004 7:55	0.35	7/6/2004 7:55	38.8
6/6/2004 9:30	2.17	6/6/2004 9:30	40	7/7/2004 7:55	0.3	7/7/2004 7:55	38
6/7/2004 7:55	2.15	6/7/2004 7:55	35.6	7/8/2004 7:45	0.33	7/8/2004 7:45	39.7
6/8/2004 8:00	2.45	6/8/2004 8:00	37	7/9/2004 8:04	0.33	7/9/2004 8:04	42
6/9/2004 8:00	2.17	6/9/2004 8:00	36	7/10/2004 8:55	0.37	7/10/2004 8:55	40.2
6/10/2004 8:20	1.77	6/10/2004 8:20	33.8	7/11/2004 8:27	0.38	7/11/2004 8:27	39.6
6/11/2004 8:15	1.81	6/11/2004 8:15	39	7/12/2004 8:50	0.36	7/12/2004 8:50	38.7
6/12/2004 8:10	1.57	6/12/2004 8:10	37.4	7/13/2004 8:05	0.38	7/13/2004 8:05	37.8
6/13/2004 10:23	0.91	6/13/2004 10:23	36.8	7/14/2004 7:45	0.44	7/14/2004 7:45	37.9
6/14/2004 7:45	1.33	6/14/2004 7:45	36.7	7/15/2004 8:00	0.46	7/15/2004 8:00	37.2
6/15/2004 8:05	1.18	6/15/2004 8:05	35.2	7/16/2004 7:50	0.46	7/16/2004 7:50	34.7
6/16/2004 7:45	1.27	6/16/2004 7:45	34.5	7/17/2004 9:05	0.43	7/17/2004 9:05	35
6/17/2004 7:45	1.4	6/17/2004 7:45	36.3	7/18/2004 9:50	0.54	7/18/2004 9:50	33.6
6/18/2004 7:50	1.57	6/18/2004 7:50	33.9	7/19/2004 7:55	0.5	7/19/2004 7:55	34.5
6/19/2004 8:55	1.43	6/19/2004 8:55	42.5	7/20/2004 7:25	0.67	7/20/2004 7:25	33.1
6/20/2004 11:40	0.59	6/20/2004 11:40	41.9	7/21/2004 7:50	0.68	7/21/2004 7:50	32.8
6/21/2004 8:02	0.58	6/21/2004 8:02	34.7	7/22/2004 7:50	0.65	7/22/2004 7:50	36
6/22/2004 7:37	0.86	6/22/2004 7:37	34.7	7/23/2004 7:45	0.66	7/23/2004 7:45	36.8
6/23/2004 8:36	0.86	6/23/2004 8:36	42.4	7/24/2004 10:30	0.74	7/24/2004 10:30	37.3
6/24/2004 8:07	0.83	6/24/2004 8:07	39.6	7/25/2004 7:55	0.71	7/25/2004 7:55	35.7
6/25/2004 7:59	0.88	6/25/2004 7:59	37.4	7/26/2004 7:45	0.67	7/26/2004 7:45	35.5
6/26/2004 8:30	0.85	6/26/2004 8:30	35.8	7/27/2004 8:20	0.7	7/27/2004 8:20	33.7
6/27/2004 8:45	0.65	6/27/2004 8:45	38.5	7/28/2004 8:28	0.75	7/28/2004 8:28	33.9
6/28/2004 8:05	0.92	6/28/2004 8:05	38.1	7/29/2004 7:50	0.82	7/29/2004 7:50	31.7
6/29/2004 8:15	1.02	6/29/2004 8:15	40	7/30/2004 8:15	0.53	7/30/2004 8:15	29.8
6/30/2004 7:45	1.13	6/30/2004 7:45	35.3	7/30/2004 8:15	0.53	7/30/2004 8:15	29.8
7/1/2004 8:20	0.6	7/1/2004 8:20	41.1	7/31/2004 8:35	0.73	7/30/2004 10:20	30.4
7/2/2004 7:50	0.5	7/2/2004 7:50	39.4	8/1/2004 10:15	0.86	7/31/2004 8:35	32
7/3/2004 10:45	1.04	7/3/2004 10:45	38	8/2/2004 8:10	0.78	8/1/2004 10:15	30.1
7/4/2004 8:00	0.98	7/4/2004 8:00	37.7	8/3/2004 7:50	1	8/2/2004 8:10	31
7/5/2004 8:25	0.84	7/5/2004 8:25	36.2	8/4/2004 8:30	0.95	8/3/2004 7:50	42.9
7/6/2004 7:50	0.78	7/6/2004 7:50	37.9	8/5/2004 7:55	0.74	8/4/2004 8:30	41.7
7/7/2004 8:10	0.35	7/7/2004 8:10	37	8/6/2004 8:15	0.75	8/5/2004 7:55	39.7

Unit 1 Dissolved Oxygen (DO) Data - 2004				Unit 2 Dissolved Oxygen (DO) Data - 2004			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
7/8/2004 7:55	0.31	7/8/2004 7:55	38.1	8/7/2004 8:26	0.82	8/6/2004 8:15	39
7/9/2004 8:20	0.31	7/9/2004 8:20	38.9	8/8/2004 8:21	0.84	8/7/2004 8:26	41.5
7/10/2004 8:45	0.23	7/10/2004 8:45	42.9	8/9/2004 8:00	0.78	8/8/2004 8:21	41.2
7/11/2004 8:12	0.37	7/11/2004 8:12	38.9	8/10/2004 7:55	0.68	8/9/2004 8:00	37.5
7/12/2004 8:40	0.31	7/12/2004 8:40	41.9	8/11/2004 10:00	0.71	8/10/2004 7:55	39
7/13/2004 8:00	0.21	7/13/2004 8:00	41.2	8/12/2004 8:10	0.69	8/11/2004 10:00	40
7/14/2004 8:00	0.48	7/14/2004 8:00	37.8	8/13/2004 7:55	0.69	8/12/2004 8:10	43.7
7/15/2004 8:20	0.41	7/15/2004 8:20	34.5	8/14/2004 8:25	0.7	8/13/2004 7:55	37
7/16/2004 8:20	0.27	7/16/2004 8:20	35.9	8/15/2004 7:55	0.69	8/14/2004 8:25	40.3
7/17/2004 9:20	0.25	7/18/2004 9:30	50.3	8/16/2004 8:15	0.71	8/15/2004 7:55	42.6
7/18/2004 9:30	0.33	7/19/2004 7:50	58	8/17/2004 8:35	0.72	8/16/2004 8:15	39.5
7/19/2004 7:50	0.3	7/20/2004 7:50	52.6	8/18/2004 8:05	0.72	8/17/2004 8:35	41
7/20/2004 7:50	0.21	7/21/2004 7:50	45.5	8/19/2004 8:15	0.7	8/18/2004 8:05	37.1
7/21/2004 7:50	0.34	7/22/2004 7:50	38.7	8/20/2004 9:00	0.71	8/19/2004 8:15	40.4
7/22/2004 7:50	1.41	7/23/2004 8:23	43.2	8/21/2004 10:45	0.76	8/20/2004 9:00	41.5
7/23/2004 8:23	1.43	7/24/2004 10:20	43	8/22/2004 9:35	0.82	8/21/2004 10:45	40.3
7/24/2004 10:20	1.33	7/25/2004 7:45	45.4	8/23/2004 8:45	0.82	8/22/2004 9:35	40.4
7/25/2004 7:45	1.21	7/26/2004 7:40	46.7	8/24/2004 7:50	0.84	8/23/2004 8:45	41.6
7/26/2004 7:40	1.14	7/27/2004 7:30	41	8/25/2004 8:05	0.93	8/24/2004 7:50	41
7/27/2004 7:30	0.93	7/28/2004 7:45	42	8/26/2004 7:50	0.82	8/25/2004 8:05	43.8
7/28/2004 7:45	1.12	7/29/2004 9:00	93.4	8/27/2004 8:15	0.74	8/26/2004 7:50	41
7/29/2004 9:00	1.09	7/30/2004 8:05	40.8	8/28/2004 9:55	0.73	8/27/2004 8:15	41.6
7/30/2004 8:05	1.47	7/31/2004 9:30	50	8/29/2004 10:45	0.75	8/28/2004 9:55	41.5
7/31/2004 9:30	1.33			8/30/2004 8:15	0.75	8/29/2004 10:45	42.3
				8/31/2004 8:15	0.7	8/30/2004 8:15	42.2
						8/31/2004 8:15	43.4
AVERAGE =	1.13	AVERAGE =	40	AVERAGE =	0.61	AVERAGE =	39

Unit 1 Dissolved Oxygen (DO) Data - 2007				Unit 2 Dissolved Oxygen (DO) Data - 2007			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
5/1/2007 8:00	0.92	5/1/2007 8:00	41.1	5/1/2007 8:10	0.67	5/1/2007 8:10	38.1
5/2/2007 7:45	0.84	5/2/2007 7:45	42.2	5/2/2007 8:00	0.73	5/2/2007 8:00	38.8
5/3/2007 8:20	0.88	5/3/2007 8:20	49.2	5/3/2007 8:20	0.89	5/3/2007 8:20	36.9
5/4/2007 8:15	0.9	5/4/2007 8:15	45.7	5/4/2007 8:10	1.01	5/4/2007 8:10	37.6
5/5/2007 8:40	0.86	5/5/2007 8:40	48	5/5/2007 8:55	1.14	5/5/2007 8:55	40.1
5/6/2007 8:15	0.88	5/6/2007 8:15	48.8	5/6/2007 8:30	1.05	5/6/2007 8:30	37.6
5/7/2007 8:05	0.86	5/7/2007 8:05	47.2	5/7/2007 7:50	1.07	5/7/2007 7:50	39.6
5/8/2007 8:00	0.82	5/8/2007 8:00	46.6	5/8/2007 7:40	1.07	5/8/2007 7:40	40
5/9/2007 8:20	0.78	5/9/2007 8:20	44.2	5/9/2007 8:50	1.08	5/9/2007 8:50	36
5/10/2007 8:25	1.13	5/10/2007 8:25	48.1	5/10/2007 7:55	1.16	5/10/2007 7:55	38.6
5/11/2007 8:00	1.16	5/11/2007 8:00	46.9	5/11/2007 7:50	1.03	5/11/2007 7:50	37.8
5/12/2007 9:15	**84.7***	5/12/2007 9:15	56	5/12/2007 10:10	1.32	5/12/2007 10:10	36.6
5/13/2007 1:20	1.1	5/13/2007 9:20	47.7	5/13/2007 9:30	0.82	5/13/2007 9:30	35.8
5/13/2007 9:20	1	5/14/2007 8:05	43.6	5/14/2007 8:20	0.86	5/14/2007 8:20	42.8
5/14/2007 8:05	1	5/15/2007 8:05	42.7	5/15/2007 8:30	0.91	5/15/2007 8:30	34.5
5/15/2007 8:05	0.88	5/16/2007 8:05	46.6	5/16/2007 8:35	0.83	5/16/2007 8:35	34.8
5/16/2007 8:05	0.84	5/17/2007 8:15	42.9	5/17/2007 8:30	0.88	5/17/2007 8:30	38.2
5/17/2007 8:15	0.82	5/18/2007 8:40	41.3	5/18/2007 7:50	0.83	5/18/2007 7:50	32.8
5/18/2007 8:40	1.06	5/19/2007 9:40	49.6	5/19/2007 9:00	0.83	5/19/2007 9:00	36.7
5/19/2007 9:40	0.99	5/20/2007 8:00	43.9	5/20/2007 8:20	0.73	5/20/2007 8:20	34.7
5/20/2007 8:00	1.12	5/21/2007 7:45	57.7	5/21/2007 8:20	0.82	5/21/2007 8:20	36.5
5/21/2007 7:45	**117.5***	5/22/2007 8:00	47.2	5/22/2007 8:00	0.98	5/22/2007 8:00	36.4
5/22/2007 8:00	0.93	5/23/2007 8:05	48	5/23/2007 8:30	0.79	5/23/2007 8:30	36.9
5/23/2007 8:05	0.66	5/24/2007 8:30	50.7	5/24/2007 8:15	0.79	5/24/2007 8:15	37.7
5/24/2007 8:30	0.6	5/25/2007 5:15	49.4	5/25/2007 8:18	0.79	5/25/2007 8:18	36.4
5/25/2007 5:15	0.62	5/26/2007 8:45	44.2	5/26/2007 9:00	0.87	5/26/2007 9:00	36.6
5/26/2007 8:45	0.81	5/27/2007 8:55	46	5/27/2007 9:10	0.83	5/27/2007 9:10	34
5/27/2007 8:55	0.79	5/28/2007 8:40	44.3	5/28/2007 9:10	0.87	5/28/2007 9:10	35.3
5/28/2007 8:40	0.73	5/29/2007 7:45	42.7	5/29/2007 7:45	0.86	5/29/2007 7:45	35.8
5/29/2007 7:45	0.77	5/30/2007 7:40	46.1	5/30/2007 8:00	1	5/30/2007 8:00	35.2
5/30/2007 7:40	0.83	5/31/2007 8:30	45	5/31/2007 8:03	0.88	5/31/2007 8:03	36.8
5/31/2007 8:30	0.75	6/1/2007 8:15	44.3	6/1/2007 8:10	0.87	6/1/2007 8:10	34.5
6/1/2007 8:15	0.79	6/2/2007 9:10	44.7	6/2/2007 9:20	0.85	6/2/2007 9:20	34.5
6/2/2007 9:10	0.77	6/3/2007 8:10	42.5	6/3/2007 8:20	0.81	6/3/2007 8:20	35.5

Unit 1 Dissolved Oxygen (DO) Data - 2007				Unit 2 Dissolved Oxygen (DO) Data - 2007			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
6/3/2007 8:10	0.85	6/4/2007 8:35	45.8	6/4/2007 8:20	0.82	6/4/2007 8:20	35.7
6/4/2007 8:35	0.77	6/5/2007 8:05	41.6	6/5/2007 8:00	0.81	6/5/2007 8:00	35.7
6/5/2007 8:05	0.83	6/6/2007 8:10	44.4	6/6/2007 8:05	0.8	6/6/2007 8:05	35.9
6/6/2007 8:10	0.87	6/7/2007 8:15	47.9	6/7/2007 8:00	0.84	6/7/2007 8:00	35.6
6/7/2007 8:15	0.79	6/8/2007 8:30	48.4	6/8/2007 8:00	0.78	6/8/2007 8:00	36.4
6/8/2007 8:30	0.74	6/9/2007 10:40	45	6/9/2007 11:00	0.75	6/9/2007 11:00	35
6/9/2007 10:40	0.76	6/10/2007 10:00	43	6/10/2007 10:15	0.75	6/10/2007 10:15	38
6/10/2007 10:00	0.75	6/11/2007 8:20	42	6/11/2007 8:15	0.81	6/11/2007 8:15	36.9
6/11/2007 8:20	0.86	6/12/2007 7:55	45	6/12/2007 8:33	0.79	6/12/2007 8:33	36.8
6/12/2007 7:55	0.93	6/13/2007 8:45	45.2	6/13/2007 8:40	0.7	6/13/2007 8:40	36.5
6/13/2007 8:45	1.23	6/14/2007 7:55	42.9	6/14/2007 7:50	0.73	6/14/2007 7:50	36
6/14/2007 7:55	1.13	6/15/2007 8:30	47	6/15/2007 8:20	0.65	6/15/2007 8:20	35.9
6/15/2007 8:30	1.05	6/16/2007 8:35	62.7	6/16/2007 8:45	0.64	6/16/2007 8:45	37.3
6/16/2007 8:35	**75.9***	6/17/2007 8:50	47.3	6/17/2007 9:00	0.57	6/17/2007 9:00	37.6
6/17/2007 8:50	1.37	6/18/2007 7:50	42.9	6/18/2007 8:05	0.57	6/18/2007 8:05	38.6
6/18/2007 7:50	0.98	6/19/2007 8:45	43.2	6/19/2007 8:30	1.4	6/19/2007 8:30	40.5
6/19/2007 8:45	0.89	6/20/2007 8:15	44.7	6/20/2007 8:30	1.2	6/20/2007 8:30	40.6
6/20/2007 8:15	0.88	6/21/2007 8:35	43.2	6/21/2007 8:45	1.4	6/21/2007 8:45	39.7
6/21/2007 8:35	0.83	6/22/2007 8:20	42.5	6/22/2007 8:45	1.05	6/22/2007 8:45	38.2
6/22/2007 8:20	0.89	6/23/2007 8:50	44.1	6/23/2007 9:15	0.5	6/23/2007 9:15	42.4
6/23/2007 8:50	0.81	6/24/2007 8:40	44.9	6/24/2007 8:55	0.72	6/24/2007 8:55	40.2
6/24/2007 8:40	0.88	6/25/2007 8:00	42.8	6/25/2007 8:35	0.85	6/25/2007 8:35	38.3
6/25/2007 8:00	0.83	6/26/2007 7:55	44	6/26/2007 8:20	0.7	6/26/2007 8:20	40.2
6/26/2007 7:55	0.77	6/28/2007 7:45	38.5	6/27/2007 8:30	0.4	6/27/2007 8:30	39.6
6/27/2007 7:55	0.78	6/29/2007 8:10	36.8	6/28/2007 8:30	0.34	6/28/2007 8:30	44.7
6/28/2007 7:45	0.75	6/30/2007 8:40	37.2	6/29/2007 8:30	0.42	6/29/2007 8:30	44
6/29/2007 8:10	0.75	7/1/2007 8:25	36.3	6/30/2007 8:50	0.51	6/30/2007 8:50	42.8
6/30/2007 8:40	0.78	7/2/2007 8:30	35.6	7/1/2007 8:35	0.49	7/1/2007 8:35	45.5
7/1/2007 8:25	0.93	7/3/2007 8:45	39.1	7/2/2007 8:40	0.59	7/2/2007 8:40	43.3
7/2/2007 8:30	0.86	7/4/2007 8:41	38.1	7/3/2007 8:45	0.66	7/3/2007 8:45	44
7/3/2007 8:45	0.87	7/5/2007 8:50	37.8	7/4/2007 9:00	0.69	7/4/2007 9:00	39
7/4/2007 8:41	0.83	7/6/2007 8:30	40	7/5/2007 8:30	0.64	7/5/2007 8:30	50.3
7/5/2007 8:50	0.8	7/7/2007 8:10	37.1	7/6/2007 8:00	0.68	7/6/2007 13:30	43.7
7/6/2007 8:30	0.81	7/8/2007 8:35	39.9	7/7/2007 8:25	0.59	7/7/2007 8:25	46.3

Unit 1 Dissolved Oxygen (DO) Data - 2007				Unit 2 Dissolved Oxygen (DO) Data - 2007			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
7/7/2007 8:10	0.8	7/9/2007 10:35	36.8	7/8/2007 8:50	0.82	7/8/2007 8:50	44
7/8/2007 8:35	0.87	7/10/2007 10:05	35.4	7/9/2007 8:20	0.95	7/9/2007 8:20	46
7/9/2007 10:35	0.77	7/11/2007 8:50	39	7/10/2007 8:05	0.77	7/10/2007 8:05	42.9
7/10/2007 10:05	0.73	7/12/2007 7:35	34.9	7/11/2007 8:20	0.79	7/11/2007 8:20	46.8
7/11/2007 8:50	0.78	7/13/2007 8:00	39.7	7/12/2007 8:20	0.72	7/12/2007 8:20	44.2
7/12/2007 7:35	0.84	7/14/2007 9:40	35.8	7/13/2007 8:30	0.66	7/13/2007 8:30	45.5
7/13/2007 8:00	0.84	7/15/2007 9:10	34.6	7/14/2007 9:55	0.64	7/14/2007 9:55	45.6
7/14/2007 9:40	0.89	7/16/2007 7:50	36.3	7/15/2007 9:45	0.67	7/15/2007 9:45	41.9
7/15/2007 9:10	1.31	7/17/2007 8:00	38.9	7/16/2007 8:30	0.72	7/16/2007 8:30	43.2
7/16/2007 7:50	1.24	7/18/2007 7:35	35.1	7/17/2007 8:30	0.73	7/17/2007 8:30	44.4
7/17/2007 8:00	1.31	7/19/2007 7:59	39.4	7/18/2007 8:05	0.74	7/18/2007 8:05	45.4
7/18/2007 7:35	1.19	7/20/2007 7:52	36.2	7/19/2007 8:20	0.67	7/19/2007 8:20	44.5
7/19/2007 7:59	1.16	7/21/2007 8:30	38.9	7/20/2007 7:50	0.73	7/20/2007 7:50	47.2
7/20/2007 7:52	1.28	7/22/2007 8:20	35.3	7/21/2007 8:45	0.66	7/21/2007 8:45	43.8
7/21/2007 8:30	1.2	7/23/2007 8:30	35.5	7/22/2007 8:35	0.69	7/22/2007 8:35	42.6
7/22/2007 8:20	1.2	7/24/2007 8:00	38.8	7/23/2007 8:30	0.7	7/23/2007 8:30	43
7/23/2007 8:30	1.14	7/31/2007 9:00	38.4	7/24/2007 8:05	1.3	7/24/2007 8:05	44
7/24/2007 8:00	1.12	8/1/2007 8:20	35.7	7/25/2007 8:15	1.26	7/25/2007 8:15	45
7/25/2007 7:50	1.17	8/2/2007 8:40	35.5	7/26/2007 8:15	1.39	7/26/2007 8:15	42
7/26/2007 7:55	1.04	8/3/2007 8:45	39.8	7/27/2007 7:35	1.32	7/27/2007 7:35	33
7/27/2007 8:15	0.71	8/4/2007 9:05	37.9	7/28/2007 9:25	1.24	7/28/2007 9:25	31.8
7/28/2007 9:15	0.74	8/5/2007 8:45	38.9	7/29/2007 9:35	1.26	7/29/2007 9:35	32.7
7/29/2007 9:25	0.8	8/6/2007 8:35	40.1	7/30/2007 8:15	1.54	7/30/2007 8:15	32.3
7/30/2007 8:30	0.83	8/7/2007 8:20	36.1	7/31/2007 8:00	1.53	7/31/2007 8:00	34.2
7/31/2007 9:00	0.82	8/8/2007 8:40	37.1	8/1/2007 8:30	1.47	8/1/2007 8:30	34.3
8/1/2007 8:20	0.79	8/9/2007 8:10	38.7	8/2/2007 8:25	1.48	8/2/2007 8:25	33.1
8/2/2007 8:40	0.76	8/10/2007 7:45	35.4	8/3/2007 7:45	1.5	8/3/2007 7:45	32.8
8/3/2007 8:45	0.76	8/11/2007 10:10	35.2	8/4/2007 9:15	1.43	8/4/2007 9:15	37.2
8/4/2007 9:05	0.75	8/12/2007 7:50	38.4	8/5/2007 8:55	1.43	8/5/2007 8:55	33.3
8/5/2007 8:45	0.79	8/13/2007 8:20	35.6	8/6/2007 8:30	1.35	8/6/2007 8:30	33.5
8/6/2007 8:35	0.76	8/14/2007 8:20	36.9	8/7/2007 8:25	1.27	8/7/2007 8:25	35
8/7/2007 3:25	0.8	8/15/2007 7:40	36.9	8/8/2007 10:30	1.09	8/8/2007 10:30	35.2
8/7/2007 8:20	0.79	8/16/2007 8:05	38.8	8/9/2007 8:15	1.14	8/9/2007 8:15	32.4
8/8/2007 8:40	0.87	8/17/2007 8:35	34.7	8/10/2007 8:15	1.13	8/10/2007 8:15	32.9

Unit 1 Dissolved Oxygen (DO) Data - 2007				Unit 2 Dissolved Oxygen (DO) Data - 2007			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
8/9/2007 8:10	0.93	8/18/2007 9:05	39.1	8/11/2007 5:10	1.19	8/11/2007 5:10	33.2
8/10/2007 7:45	0.85	8/19/2007 8:35	36	8/12/2007 7:55	1.04	8/12/2007 7:55	32
8/11/2007 10:10	0.84	8/20/2007 8:35	37.2	8/13/2007 8:20	1.05	8/13/2007 8:20	34.7
8/12/2007 7:50	0.99	8/21/2007 8:20	39.2	8/14/2007 8:25	1.03	8/14/2007 8:25	33.2
8/13/2007 8:20	0.84	8/22/2007 8:15	38.6	8/15/2007 8:30	1.11	8/15/2007 8:30	36.5
8/14/2007 8:20	0.82	8/23/2007 8:30	38.7	8/16/2007 8:20	1.13	8/16/2007 8:20	33
8/15/2007 7:40	0.78	8/24/2007 8:28	38.2	8/17/2007 8:05	0.99	8/17/2007 8:05	35.7
8/16/2007 8:05	0.75	8/25/2007 9:00	37.4	8/18/2007 9:15	1.08	8/18/2007 9:15	32.9
8/17/2007 8:35	0.7	8/26/2007 8:35	37	8/19/2007 8:45	1.08	8/19/2007 8:45	35
8/18/2007 9:05	0.7	8/27/2007 8:23	35.3	8/20/2007 8:20	1.16	8/20/2007 8:20	31
8/19/2007 8:35	0.73	8/28/2007 8:05	35.4	8/21/2007 8:25	1.09	8/21/2007 8:25	33.2
8/20/2007 8:35	0.7	8/29/2007 8:35	36.5	8/22/2007 8:20	1.04	8/22/2007 8:20	32.9
8/21/2007 8:20	0.74	8/30/2007 8:20	38.2	8/23/2007 8:35	1	8/23/2007 8:35	38.6
8/22/2007 8:15	0.71	8/31/2007 8:45	37.5	8/24/2007 8:05	1.11	8/24/2007 8:05	42
8/23/2007 8:30	0.72	9/1/2007 8:25	39	8/25/2007 9:15	0.95	8/25/2007 9:15	36.9
8/24/2007 8:28	0.93	9/2/2007 8:40	38	8/26/2007 8:15	0.86	8/26/2007 8:15	30
8/25/2007 9:00	0.87	9/3/2007 8:00	36.5	8/27/2007 8:35	0.68	8/29/2007 8:25	42.7
8/26/2007 8:35	0.92	9/4/2007 8:05	38.8	8/28/2007 8:15	0.33	8/30/2007 8:40	41.6
8/27/2007 8:23	0.94	9/5/2007 7:35	37	8/29/2007 8:25	0.93	8/31/2007 8:20	39.8
8/28/2007 8:05	0.94	9/6/2007 7:50	37.3	8/30/2007 8:40	1.17	9/1/2007 8:35	40
8/29/2007 8:35	0.97	9/7/2007 7:45	37	8/31/2007 8:20	1.17	9/2/2007 8:50	43.4
8/30/2007 8:20	0.81	9/8/2007 9:30	38.3	9/1/2007 8:35	1.31	9/3/2007 8:40	41
8/31/2007 8:45	0.76	9/9/2007 8:05	37.6	9/2/2007 8:50	1.21	9/4/2007 8:05	40.6
9/1/2007 8:25	0.8	9/10/2007 8:40	44	9/3/2007 8:40	1.4	9/5/2007 8:15	41.1
9/2/2007 8:40	0.9	9/11/2007 8:15	34.5	9/4/2007 8:05	1.31	9/6/2007 7:45	40.1
9/3/2007 8:00	0.93	9/12/2007 8:45	36	9/5/2007 8:15	1.52	9/7/2007 8:10	37.4
9/4/2007 8:05	0.85	9/13/2007 8:45	39.5	9/6/2007 7:45	1.5	9/8/2007 8:30	38.2
9/5/2007 7:35	0.9	9/14/2007 8:15	40	9/7/2007 8:10	1.56	9/9/2007 8:35	38.9
9/6/2007 7:50	0.89	9/15/2007 9:00	36.3	9/8/2007 8:30	1.43	9/10/2007 8:45	39.6
9/7/2007 7:45	0.91	9/16/2007 8:45	38	9/9/2007 8:35	1.51	9/11/2007 8:05	39.6
9/8/2007 9:30	0.93	9/17/2007 8:45	37.8	9/10/2007 8:45	1.52	9/12/2007 9:10	38.9
9/9/2007 8:05	1.03	9/18/2007 8:00	36.5	9/11/2007 8:05	1.34	9/13/2007 8:25	40.4
9/10/2007 8:40	0.97	9/19/2007 8:00	39	9/12/2007 9:10	1.31	9/14/2007 8:10	41
9/11/2007 8:15	0.95	9/20/2007 8:45	35.4	9/13/2007 8:25	1.8	9/15/2007 9:15	39.2

Unit 1 Dissolved Oxygen (DO) Data - 2007				Unit 2 Dissolved Oxygen (DO) Data - 2007			
Reactor Water		Feedwater		Reactor Water		Feedwater	
Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb	Date/Time	DO, ppb
9/12/2007 8:45	0.96	9/21/2007 8:45	36.5	9/14/2007 8:10	1.65	9/16/2007 8:30	40.5
9/13/2007 8:45	7.9	9/22/2007 9:20	37.1	9/15/2007 9:15	1.6	9/17/2007 8:15	41.9
9/13/2007 13:15	1.3	9/23/2007 9:05	36.3	9/16/2007 8:30	1.34	9/18/2007 7:40	40.9
9/14/2007 8:15	0.82	9/24/2007 8:15	40.2	9/17/2007 8:15	1.26	9/19/2007 8:00	39.9
9/15/2007 9:00	0.83	9/25/2007 8:15	36.3	9/18/2007 7:40	1.47	9/20/2007 9:03	39.3
9/16/2007 8:45	0.88	9/26/2007 8:20	39.1	9/19/2007 8:00	1.39	9/21/2007 8:45	39.1
9/17/2007 8:45	0.79	9/27/2007 8:10	38.3	9/20/2007 9:03	1.2	9/22/2007 9:05	37.6
9/18/2007 8:00	0.93	9/28/2007 8:00	36.2	9/21/2007 8:45	1.3	9/23/2007 8:50	40.4
9/19/2007 8:00	1	9/29/2007 8:30	46.2	9/22/2007 9:05	1.33	9/24/2007 7:55	37.8
9/20/2007 8:45	1	9/30/2007 8:30	46.8	9/23/2007 8:50	1.34	9/25/2007 8:25	38
9/21/2007 8:45	1.02			9/24/2007 7:55	1.35	9/26/2007 7:55	38.8
9/22/2007 9:20	1.17			9/25/2007 8:25	1.24	9/27/2007 7:50	38
9/23/2007 9:05	1.2			9/26/2007 7:55	1.26	9/28/2007 7:45	37.2
9/24/2007 8:15	1.12			9/27/2007 7:50	1.08	9/29/2007 8:45	40.3
9/25/2007 8:15	1.24			9/28/2007 7:45	1.31	9/30/2007 8:40	38.9
9/26/2007 8:20	1.23			9/29/2007 8:45	1.1		
9/27/2007 8:10	1.42			9/30/2007 8:40	1.07		
9/28/2007 8:00	1.42						
9/29/2007 8:30	1.23						
9/30/2007 8:30	1.34						
AVERAGE =	2.72*	AVERAGE =	41	AVERAGE =	1.00	AVERAGE =	38

* Note that the Unit 1 Reactor Water DO values on 5/12, 5/21, and 6/16 (in bold) are > 50, indicating that hydrogen water chemistry (HWC) may have been out of service on these days. For this data sample, that is only 3 days out of the 5-month sample period when HWC was not in-service. This supports the assumption that HWC is in-service 90% of the time.