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August 27, 2007

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Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

RE: DOCKET NOS. E-01345A-05-0816, E-01345A-05-0826, [REDACTED]
DECISION NO. 69663

Dear Sir or Madame:

Enclosed please find the Company's Fuel Audit Implementation Report as required in Decision No. 69663, page 157, Ordering Paragraph line 7.

If you have any questions, please call Jeff Johnson at 602-250-2661.

Sincerely,

Barbara Klemstine
Director
Regulation & Pricing

BK/dst

Attachments

CC: Ernest Johnson
Brian Bozzo
Parties of Record

Arizona Corporation Commission
DOCKETED
AUG 27 2007

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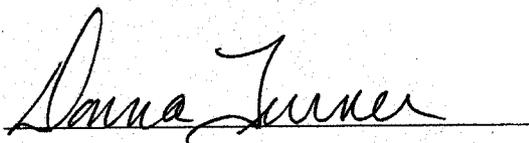
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ARIZONA PUBLIC SERVICE COMPANY

**REPORT ON
IMPLEMENTATION OF AUDIT RECOMMENDATIONS
PURSUANT TO DECISION NO. 69663**

**IN
LIBERTY CONSULTING GROUP'S
FINAL AUDIT REPORT OF
APS FUEL AND PURCHASED POWER
PROCUREMENT AND COSTS
DATED 8/31/2006**

AUGUST 27, 2007



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I. INTRODUCTION

On November 9, 2005, the Arizona Corporation Commission (“ACC” or the Commission) opened ACC Docket No. E-01345A-05-0827 to audit the fuel and purchased power practices and costs of Arizona Public Service Company (“APS” or “the Company”). Commission Staff awarded the contract to conduct this audit to The Liberty Consulting Group (“Liberty”), who began the audit in February of 2006. The audit included over 200 data requests, on-site interviews with Company personnel, on-site visits to several of the Company’s generating plants, and an on-site visit to the Company’s trading floor. Liberty issued their final audit report (the “Liberty Report”) on August 31, 2006.

The Liberty Report concluded that the Company handled fuel and energy procurement and management in a manner that produced reasonable and appropriate costs during the period of April through December of 2005.¹

In their audit, Liberty reviewed several areas of the Company’s operations relating to fuel and purchased power issues. These areas included Organization, Staffing and Controls, Fuel Management, Fuel Contracts, Hedging and Risk Management, Forecasting and Modeling, Plant Operations, Purchased Power and Off-System Sales, and Nuclear Fuel. A financial audit of the Company’s Power Supply Adjustor (“PSA”) costs was also conducted. Liberty formulated conclusions regarding the Company’s performance in each of these areas.

In all, Liberty reached sixty-nine separate conclusions as a result of the audit. In fifty-one, or 74%, of those conclusions, Liberty determined that the Company’s performance was reasonable and appropriate, and no actions were recommended. Specific recommendations were presented for each of the remaining conclusions, many of which dealt with the formulation or formalization of policies and procedures related to tasks performed in the areas under review. In some cases, recommended tasks were already being pursued by Company personnel at the time of the audit, and several recommended tasks were completed prior to the conclusion of the audit.

In September of 2006, the Commission consolidated Docket No. E-01345A-05-0827 with the Company’s then pending rate case Docket No. E-01345A-05-816 and the pending prudence review of 2005 unplanned outages at Palo Verde (these consolidated cases are referred to in this report as the “Rate Case”). Hearings in the Rate Case were held in October and November of 2006.

The Rate Case decision, ACC Decision No. 69663, was issued on June 28, 2007. In that Decision, the Commission states that a reasonable way to address the audit findings is for the Company to prepare an implementation plan for each recommendation that it accepts, and for each recommendation it does not accept, the Company is required to provide a detailed explanation of the reasons why that recommendation need not be

¹ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, p. 4.

implemented.² Therefore, the Company was ordered to prepare and file with Docket Control, as a compliance item, a Fuel Audit Implementation Plan within 60 days of the date of the Decision.³

This report is the Company's response to each of the recommendations outlined in the Liberty Report. The Company has accepted all twenty of Liberty's recommendations in whole or in part, and has completed its responsive action in fourteen of those recommendations. Tasks are in progress for the remainder.

Included herein is a status report for each of the Liberty Report recommendations, along with policies and/or procedures that have been implemented or updated as a result of the audit. For those recommendations for which the Company has not yet completed its response, an implementation plan is outlined along with an expected completion date.

² See ACC Decision No. 69663, p. 105.

³ See ACC Decision No. 69663, p. 157.

II. ORGANIZATION, STAFFING AND CONTROLS

STAFF RECOMMENDATION #1

Conclusion: The fuel and power procurement organizations have satisfactory procedures for many of the specific functional areas within these organizations, but Fuel Procurement does not have sufficient procedures for fuel contract management and administration.

Recommendation: Develop a complete set of procedures related to the management and administration of coal contracts.

Company Response: ACCEPTED

Discussion:

The Liberty Report found that most of the specific functional areas in the fuel and procurement organizations within the Company have policies and procedures that are sufficiently detailed and comprehensive.⁴ The report concludes that APS effectively administers coal contracts.⁵ In addition, the report found that, during a recent search for and analysis of an alternate coal supply for the Cholla Generating Station, the Company followed an appropriate, structured and disciplined process for supply procurement.⁶ However, written procedures for such processes at the time of the audit appeared to be absent, incomplete or lacking in detail.

The Company agrees that written procedures documenting coal contract management processes can be developed or improved. In its testimony in Docket E-01345A-05-0816, in response to this recommendation, the Company committed to review its procedures for coal contract management administration and incorporate detail as necessary to reflect its management processes currently in place.⁷

Status: IN PROGRESS

The Company is currently preparing specific desk instructions and detailed process flowcharts that describe Cholla, Four Corners, and Navajo coal and coal transportation contract management, procurement, and administration processes. These procedures will focus on recurring contract management activities and will be utilized by Fuel Procurement employees assigned to coal strategies. For Cholla coal supply activities, where additional procurement in conjunction with the long-term contracts may be appropriate, non-routine purchases and transportation management will be addressed separately. The Company expects these procedures to be prepared by mid-October 2007.

⁴ See Liberty Report, p. 30.

⁵ See Liberty Report, p. 7.

⁶ See Liberty Report, p. 23.

⁷ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, page 3.

STAFF RECOMMENDATION #2

Conclusion: The Company's procedures for accepting offers of gas supply are not sufficiently formal.

Recommendation: Audit and revise procedures for acceptance of offers for gas supply.

Company Response: ACCEPTED

Discussion:

The Company's gas supply is purchased by traders in one of two ways: by accepting pre-approved supplier offers posted on an electronic trading platform; or by person-to-person telephone calls to those same pre-approved suppliers. The purchase process includes some oversight in that Company traders confer with each other prior to the acceptance of an offer, and agreed upon prices are spot-checked against other offers and against price-reporting services. The Liberty Report concludes that the oversight process is not sufficiently formal for expenditures that routinely total in the millions of dollars per month.⁸

Although the Company's testimony in the Rate Case adds that telephone conversations are recorded for audit purposes, and computer transactions utilizing easily discernible market values are sufficiently transparent, the Company agrees that oversight procedures can be enhanced and formalized through written procedures.⁹

Status: COMPLETE

In direct response to Liberty's recommendation, APS has implemented a detailed gas supply audit program in order to monitor gas procurement activities.

Specifically, APS expanded its review process to compare its transacted physical gas prices to market prices through the use of prices captured each hour by an electronic trading platform. Transactions made by APS that are found to fall outside these market parameters are noted by the Compliance Manager and reviewed with the individual trader and Portfolio Manager. In the event the trader has not transacted within the market parameters under generally accepted circumstances, the trader is subject to the terms for trading violations as documented in the Company's Energy Risk Management Guidelines (a voluminous document that has been provided and reviewed by ACC Staff and Liberty). In addition, the Compliance Manager has systematically undertaken a weekly audit process of all physical gas transactions for APS.

The procedure for the APS Marketing and Trading (APSM&T) Gas Pricing Daily Audit follows.

⁸ See Liberty Report, p. 31.

⁹ See Rebuttal Testimony of Thomas J. Carlson in the Rate Case, filed September 15, 2006, p. 14.

Gas Pricing Daily Audit

(September 2006 – Updated October 2006)

OBJECTIVE

APSM&T has enhanced their procedures / controls to identify APS gas supply transactions that are executed outside of an hourly market band width as identified by electronic trade detail in the market. The comparison of prices executed for APSM&T transactions to pricing data obtained from the market provides an extra layer of controls to detect situations where there is potential for "trader kickbacks" or "external incentives" to transact in a manner that is not in the best interest of the company, shareholders and ratepayers.

The purpose of this process is to identify, review and communicate those exceptions where APS has transacted outside of a determined market band width and to document those results. The following is a description of that process:

PROCESS

1. APSM&T Trading Floor Compliance Manager, or designee, receives an End of Day Gas Enterprise Report (EOD Enterprise Rpt) via e-mail directly from the Inter-Continental Exchange (ICE) each day. The "GasDeals" tab is a comprehensive compilation of all electronic transactions by region, delivery point, term, product traded, and time/date stamp. The low-high ranges by hour are utilized to comparison purposes.
2. APSM&T Trading Floor Compliance Manager, or designee, copies all daily gas transactions to an Excel spreadsheet each day and filters to identify the transactions eligible for review (see below). Risk Control or Trader Assistant will provide Compliance with the trade logs and time stamp of the trade to be utilized for comparison purposes to market transactional data.
3. The following describes the relevant APSM&T trades for review and the process to validate compliance:
 - a. All non-electronic external (voice broker, direct counterparty) fixed price purchases in SGx books identified on the Risk Control export are reviewed for compliance each day.
 - b. Identify the transaction time for each selected APSM&T trade and compare against the low-high band for that respective hour, delivery point, term and product as identified in the EOD Enterprise Rpt "GasDeals" detail.
 - c. Document the results in a spreadsheet and note all exceptions where the executed transaction price is outside of the hourly band width. In those cases where the ICE transactions in any one hour are minimal, note the number of transactions establishing the low-high band width. All exceptions are reviewed with the trader.
 - d. In the event that an exception is verifiably outside of market pricing for any one hour and considered intentional, the Trader will be subject to sanctions identified in the PWCC Energy Risk Management Guidelines.
 - e. Randomly select one trade per "system" trader per day and verify that transaction is accurate on a recorded phone line and time is correctly represented on the trade log. Document any exceptions accordingly.
4. Retain all daily documentation in a spreadsheet and immediately communicate any exceptions to the Director Financial Control and/or Compliance Manager.

STAFF RECOMMENDATION #3

Conclusion: Available summaries of the board members' backgrounds show sufficient experience in matters relevant to utility fuel and energy management; however, Liberty was not able to determine through interviews with them what specific knowledge and experience they bring to bear or what values, criteria, performance indicators, and critical decision/judgment points they apply.

Recommendation: Secure an understanding with APS that Commission auditing includes access to members of the board of directors.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that sufficient information was available, through board meeting minutes and review of member experience, to conclude that APS board members receive adequate information through regular reporting channels regarding fuel and energy matters. It also concluded that there is no reason to believe that an oversight gap exists or that a cost concern is warranted.¹⁰ However, Liberty would have preferred to discuss operations and management of fuel issues directly with board members.

In Decision No. 69663 (June 28, 2007), the Commission included the following language that addressed the issue of access to the Board of Directors: *"APS should permit access to its Board of Directors in any future audit or prudence review conducted by Staff at the Commission's request. The Company bears the burden of providing the Commission information essential to develop the evidentiary record sufficient for the Commission's consideration of an issue particularly where the issue involves performance evaluations that may result in an impact on rates or disallowances."*¹¹

The Company agrees that the Commission has the authority to access members of the APS Board of Directors; its subpoena power is identical to that of the Arizona courts. However, consistent with governing law in this area, which applies equally to Superior Court and Commission proceedings, APS anticipates that such access would, as a general rule, be limited to those circumstances where the board member sought to be interviewed has unique, personal knowledge of the subject at issue and less intrusive means are not available to the auditor to obtain the information being sought.¹²

¹⁰ See Liberty Report, p. 32.

¹¹ See ACC Decision No. 69663, Finding of Fact 138 at p. 152.

¹² Policy concerns related to accessibility to board members include confidentiality concerns regarding corporate activity and the prevention of a chilling effect on the duties and responsibilities of board members to make internal policy decisions and to engage in self-critical analysis of corporate actions without fear of unwarranted and unnecessary public disclosure.

Status: COMPLETE

To implement the Liberty Consulting recommendation, the Company suggests the following process:

If, during an audit or prudence review conducted by Staff at the Commission's request, Staff determines that access to a member of the board of directors is necessary to develop the evidentiary record, Staff will request an interview in writing specifying why the particular Board member has unique or superior knowledge of the information sought. The Company will then make reasonable inquiry and will act in good faith to comply with Staff's request, and will notify Staff either: 1) that APS will schedule a mutually convenient date and time to meet with the member of the Board who has personal knowledge of the information sought; or 2) that the Company believes there are other available sources where the information could be more fully and less obtrusively obtained. In the latter case, APS will provide to Staff or its consultant these other available resources.

Should the Staff continue to believe that direct access to an APS board member is necessary to obtain the sought after information, this issue would be treated in a manner consistent with other discovery disputes.

III. FUEL MANAGEMENT

STAFF RECOMMENDATION #1

Conclusion: Manual processes in handling coal weight information are not efficient.

Recommendation: Streamline the procedures for handling of information on coal weights.

Company Response: ACCEPTED

Discussion:

The Liberty Report found that the Company's processes for handling coal weight information rely on multiple manual data handling steps where there is the possibility of entry of incorrect data into relevant computer programs.¹³ The report concludes that this manual style of data collection is inefficient. The report suggests that electronic transfer of data could eliminate multiple steps in the process; however, the report does not specifically recommend automating the transfer of coal weight data into the appropriate computer system, although it notes that some other utilities have implemented such a process.

The Company agrees that the manual process used for handling coal weights for sample analysis at the time of the audit should be reevaluated. In its testimony in the Rate Case, the Company also agreed that the automation of coal weight data appears to have merit. The Company will evaluate available automation methods and implement those that are found to result in a positive cost benefit.¹⁴

Status: IN PROGRESS

The Company has reviewed its current process for handling coal weights and analyzing coal samples. Results of this review are as follows:

At the Cholla Generating Station: For coal received from the McKinley mine, it is not practical to make major changes to the process as receipt of coal from this location will cease at the end of 2009. For future ongoing receipt of coal at Cholla from the Lee Ranch/El Segundo mine complex, the review determined that electronic transfer of data will add benefit and efficiency. Activities are underway to put this process in place by the end of 2007. A management summary report will be issued during the first quarter of 2008 to document these changes.

¹³ See Liberty Report, p. 50.

¹⁴ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, p. 3.

At the Four Corners Generating Station: The process to track coal weight, as stated in the Liberty report, has resulted in performance to contract requirements. Vendor compliance is verified regularly and APS has effective communication with vendors on coal weight issues. The Company has evaluated the automation of its processes at Four Corners and did not find a cost benefit associated with changing the existing process at Four Corners. As noted in the Liberty Report, the Company's procedures for taking coal samples at the Four Corners Station are sound.¹⁵

¹⁵ See Liberty Report, p. 51.

STAFF RECOMMENDATION #2

Conclusion: The Fuel Department appropriately manages coal inventory, but its recent reduction in the inventory target for Regular Coal at the Cholla Station has been too large.

Recommendation: Revise the inventory target for Regular Coal at the Cholla Station from 25 days of supply to 35 days of supply.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that an appropriate reduction of coal inventory was recently implemented at the Cholla Generating Station. However, the report concludes that the inventory target level set as a result of that reduction for one type of coal, the Regular Coal, is too low for planned inventory needs and is, in fact, not the inventory level that the station was consistently managing to at the time of the audit.¹⁶ It concluded that the Company's inventory practice was more appropriate than its target, and the then effective target of 25 days should be revised to reflect the practice of a 35 day target.¹⁷

In its testimony in the Rate Case, the Company stated that the Fuel Procurement department would work with Cholla Station management to review the inventory targets and adjust them to reflect the appropriate inventory practice.¹⁸

Status: COMPLETE

The monthly target inventory level is typically confirmed annually with the Cholla plant management during the development of the fuel budget and annual operating plans. This process includes an evaluation of contracted commitments for coal supply and rail capacity as well as projected coal burns.

The Cholla inventory target for 2007 was documented in a letter from the Director of APS Fuel Procurement to the Cholla Plant Manager dated January 23, 2007. The inventory target for Regular Coal (excluding low sulfur coal) is based on a McKinley Regular Sulfur Coal inventory target of 255,000 tons, in addition to the Alternative Coal target of 48,600 tons. This results in a total Regular Coal monthly inventory target of 303,600 tons for 2007. This total is slightly greater than the 297,500 tons required for 35 days of full load burn operation at approximately 8,500 tons per day. The 2007 inventory target letter is attached here, redacted for confidential contractual information.

A similar analysis of the appropriate inventory targets for the Cholla Plant will be completed each year.

¹⁶ See Liberty Report, p. 52.

¹⁷ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, p. 13.

¹⁸ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, p. 4.



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To: Conrad Spencer
From: Marc F. Sauvageau
Date: January 23, 2007
Re: Cholla 2007 Coal Deliveries and Inventory Target

This memo is to inform you of the contracted coal tonnage to be delivered to Cholla in 2007 and to seek your concurrence with regard to both the tonnage and inventory targets.

The following are the tons contracted for delivery in 2007:



Additionally, the inventory targets for 2007 are as follows:



Fuel Procurement will continuously monitor the performance of both the supply/transportation contracts and inventory levels and report the results on our intra-company website. If any issues arise we will notify you as well as explore coal procurement options from resources outside of those mentioned above.

Marc F. Sauvageau

Conrad Spencer

STAFF RECOMMENDATION #3

Conclusion: APS's historical approach to [natural] gas supply management is typical, but current circumstances constrain its ability to address changes from full-requirements service from the pipeline.

Recommendation: Conduct a comprehensive analysis of [natural] gas purchasing and management under ELP's revised rate structure, and report to the Commission.

Company Response: ACCEPTED

Discussion:

The Company's main gas transportation supplier is El Paso Natural Gas (ELP). Changes in ELP's load centers, and the emphasis of unbundled service and pricing at the Federal Energy Regulatory Commission (FERC) over the past several years, have resulted in a new pricing structure at ELP that will significantly increase the Company's price for this essential service. The Liberty Report concludes that, unless the Company finds ways to bypass some of ELP's newly-specialized services, it has little option but to pay the extra cost for gas transportation.¹⁹ The report recommends that the Company analyze facilities additions and other changes that would have the effect of lowering its transportation requirements, and recommends that the Company file with the ACC a report analyzing the impact of the new prices and possible alternatives within a year.²⁰

The Company agrees that the unbundling of its full requirements agreement with ELP will create a substantial shift in pricing structure. The Company testified in the Rate Case that it had already begun the process of reviewing alternatives to future natural gas pipeline transportation and the associated costs, such as high deliverability natural gas storage and liquefied natural gas.²¹

Status: IN PROGRESS

As of the writing of this report, the ELP rate case before the FERC is pending settlement. An order is expected sometime during the fourth quarter of 2007. Once the price structure and fees for future gas transportation costs are final, the Company will conduct a comprehensive analysis on the impact of these costs to both the Company and its customers. In the interim, initial reviews of various price and fee scenarios, along with detailed analysis of natural gas pipeline costs and options for minimization of these costs, are in progress. The Company expects to complete and file the recommended report by the third quarter of 2008.

¹⁹ See Liberty Report, p. 53.

²⁰ See Liberty Report, p. 54.

²¹ See Rebuttal Testimony of Thomas J. Carlson in the Rate Case, filed September 15, 2006, pp. 12-13.

In addition, the Company's participation in the Transwestern Pipeline Project as discussed in ACC Docket No. E-01345A-05-0895 may provide relief from expected increases in cost as a result of the ELP rate case before the FERC. As required in Decision No. 68597, the Company provides status reports to Commission Staff every six months on the progress of the pipeline.

IV. HEDGING AND RISK MANAGEMENT**STAFF RECOMMENDATION #1**

Conclusion: [While] the Company's hedging program has been successful in meeting its primary objective, [it] will, however, prevent costs from falling.

Recommendation: Engage stakeholders in a discussion of hedging program objectives.

Company Position: ACCEPTED

Discussion:

The Liberty Report states that a consequence of the primary goal of price stability of the Company's hedge program is that those costs subject to hedging will not decline rapidly if market prices go down. Although today's hedged positions are preventing rising costs, the same positions will prevent costs from going down in times of falling market prices. The report states that the Company has tried to prepare its stakeholders for this possibility, but the report suggests that the matter deserves more extended discussion.²²

Consequently, the report suggests that a dialogue should take place with stakeholders and with the Commission to determine what the goals of the Company's hedging program should be and to what extent prices should be hedged. Even if it is ultimately determined that no changes are necessary, a common understanding of the program's operation will be promoted.²³

The Company concurs that the primary goal of its hedging program is price stability. This measured approach to hedging helps customers largely avoid the turbulence that can occur in volatile short-term energy commodity markets.²⁴ The Company also acknowledges that this goal may prevent costs from going down for that portion of fuel cost that has been hedged in exchange for minimizing some of the inherent risk of energy marketplaces.²⁵ Finally, the Company agrees that a discussion of the hedging program with stakeholders and the Commission is worthwhile.

Status: IN PROGRESS

There is a detailed discussion of the Company's hedging practices in the Liberty Report.²⁶ As a part of its testimony in the Rate Case, the Company also provided a

²² See Liberty Report, p. 78.

²³ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, p. 18.

²⁴ See Rebuttal Testimony of Thomas J. Carlson in the Rate Case, filed September 15, 2006, p. 4.

²⁵ See Rate Case Transcript Volume VI at 1314 [Carlson].

²⁶ See Liberty Report, pp. 67-72, 76-78, 80.

detailed discussion of its hedging programs, including the primary goal and the risk management incorporated in the program.²⁷

In addition, the Company intends to meet with customer group representatives in the upcoming months to obtain input regarding the program and customer preferences. The Company will report to the Commission Staff regarding these meetings.

²⁷ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, pp. 45-47.

STAFF RECOMMENDATION #2

Conclusion: The segregation of utility and non-utility [trading] activities is not as complete as it should be.

Recommendation: Report to the Commission on the future plans for non-utility [trading] activities.

Company Position: ACCEPTED

Discussion:

The Liberty Report lists a number of concerns regarding non-utility trading activities undertaken by the Company, including physical separation of traders, risk metrics for utility activities, and significant internal audit needs. Liberty recommends that the Company physically separate its utility and non-utility activities and promptly complete ongoing efforts to ensure there is no non-utility use of utility resources or opportunities.²⁸ However, the report also acknowledges that the Company intends to shut down non-utility activity when the last full-requirements contracts have expired in mid-2008, which would negate the need for such separation.²⁹

In its testimony, the Company notes that revisions to its Code of Conduct required adoption of new policies and procedures designed to increase separation between utility and non-utility activities. The Company committed to limit non-utility trading activities to managing and terminating existing non-utility wholesale contracts, and reported that the then expected end date of these activities was May of 2008.³⁰ In addition, prior to that time, the Company intended to implement additional physical separation and controls to respond to this recommendation. The Company testified that those additional measures were expected to be completed in November of 2006.³¹

Status: IN PROGRESS

Consistent with the Liberty Report and its Rate Case testimony, the Company continues to work towards the elimination of remaining non-utility activities with the expiration of the last non-Company full-requirements contracts in mid-2008. In 2007, Pinnacle West Marketing and Trading sold a number of its non-utility gas and power commodity positions to Morgan Stanley, subject to approval of that transaction by FERC. On August 16, 2007, FERC approved the transaction, and the Company hopes to have the transfer of those positions to Morgan Stanley completed by the fourth quarter of 2007.

²⁸ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, pp. 15-16.

²⁹ See Liberty Report, pp. 78-79.

³⁰ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 48.

³¹ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, pp. 48-49.

Attached is the Company's Code of Conduct Policy No. 11, Provision of Trading Floor Services by APS, which addresses the separation and reporting issues cited in the Liberty Report. In addition, physical separation of the Company's utility and non-utility traders was accomplished by October of 2006. The non-utility trading desk is located in a separate area of the trading floor out of view from the utility traders. All personnel on the trading floor have been extensively trained on the appropriate Code of Conduct requirements and the consequences of violations in the segregation of utility and non-utility activities.



THE POWER TO MAKE IT HAPPEN™

CODE OF CONDUCT POLICY NO. 11	CODE SECTION. Part Two – Basic Principles Section IV (I)
SUBJECT: Provision of Trading Floor Services By APS	

Definitions:

“ACC” means the Arizona Corporation Commission.

“APS” means Arizona Public Service Company.

“APS Pinnacle West Trader” means an employee of APS’s Marketing and Trading Department that provides Trading Desk Services to Pinnacle West.

“APS Trader” means an employee of APS’s Marketing and Trading Department that provides Trading Desk Services to APS.

“Back Office Support Services” means accounting, legal, and compliance-related services.

“Competitive Electric Affiliate” means those affiliates of APS engaged in either Competitive Retail Services or Competitive Wholesale Services.

“Compliance Department” means the APS Federal Regulation and Compliance Department, or any successor department as designated by APS from time to time, responsible for administering the APS Code of Conduct and corresponding Policies and Procedures.

“Employees” means an employee of any of the Pinnacle West Capital Corporation and its affiliates or subsidiaries, including all authorized agents, contractors, or supplemental personnel.

“Operating Employees” means employees, contractors, consultants, or agents who have day-to-day duties and responsibilities for planning, directing, organizing, or carrying out energy-related operations. Operating employees include, but are not limited to, generation employees, transmission employees, trading desk employees, and distribution employees. Operating employees do not include employees performing support services in the areas specifically identified in the definition of Shared Services.

“Pinnacle West” means Pinnacle West Capital Corporation, the parent holding company of APS and other Affiliates, or a wholesale power trading company that is created in the future as a subsidiary of Pinnacle West Capital Corporation to assume Pinnacle West Capital Corporation’s wholesale power contracts.

"Policies and Procedures" means those policies and procedures developed by APS to implement this Code of Conduct.

"Shared Services" means those support services provided by Pinnacle West or any of its affiliates, including but not limited to human resources; accounting; corporate governance; tax; insurance; risk and insurance management; claims services; public safety; energy risk management; audit services; contract management; information and communication technology; communications; environmental; health and safety; regulatory services; system dispatch; transportation; security; facilities; shareholder services; legal services; public affairs; and enterprise finance. Unless specifically authorized in this Code of Conduct, Operating Employees are prohibited from providing Shared Services.

"Trading Books" means accounting books that record transactions with counterparties relating to the purchase or sale of energy or capacity.

"Trading Desk Services" means offering to buy or sell energy or capacity, including both financial and physical transactions, or engaging in discussions with a counterparty that could lead to such an offer.

"Transmission-Related Services" means services relating to the transmission or delivery of power, including such services as acting as a scheduling coordinator, complying with North American Electric Reliability Council or Western Electric Coordinating Council requirements, and complying with Open Access Transmission Tariff requirements.

Purpose:

The purpose of this policy is to ensure that APS complies with the Trading Floor requirements in the Code of Conduct if it provides Trading Desk Services to Pinnacle West.

Applicability:

This Policy and Procedure applies if APS Marketing and Trading employees provide Trading Desk Services to Pinnacle West.

Policy:

1. Provision of Trading Desk Services to Pinnacle West

APS may provide Trading Desk Services to Pinnacle West only if the following provisions are met:

- (A) Trading Desk Services to Pinnacle West shall be provided only by APS Pinnacle West Traders.

- (B) APS Traders shall not provide Trading Desk Services to Pinnacle West.
- (C) APS Pinnacle West Traders shall not provide Trading Desk Services to APS.
- (D) All costs of providing such Trading Desk Services shall be allocated such that APS ratepayers do not subsidize the costs of providing any non-APS Trading Desk Services.
- (E) All costs of providing Support Services and Transmission-Related Services shall be allocated such that APS ratepayers do not subsidize the costs of providing any non-APS Support Services or non-APS Transmission-Related Services.
- (F) Any employee who transfers from being an APS Pinnacle West Trader to being an APS Trader, or who transfers from being an APS Trader to being an APS Pinnacle West Trader must notify the Regulatory Compliance Department prior to the transfer. APS shall report all such transfers each year in its annual report of employee transfers pursuant to the Code of Conduct.
- (G) Any APS employee who supervises APS Pinnacle West Traders shall not provide Trading Desk Services for APS, and all costs associated with supervising APS Pinnacle West Traders shall be allocated such that APS ratepayers do not subsidize the costs of APS Pinnacle West Traders.

2. **Sales of Power to a Competitive Electric Affiliate**

If APS sells energy or capacity to a Competitive Electric Affiliate, the sale must be an Arm's Length Transaction regardless of whether it is made under a FERC-approved Market Based Rate Tariff or a cost-based rate.

3. **Purchases of Power from a Competitive Electric Affiliate**

If APS buys energy or capacity from a Competitive Electric Affiliate, the purchase must comply with APS's Competitive Procurement Policy.

4. **Accounting Requirements**

APS shall maintain distinct Trading Books for Pinnacle West wholesale power transactions and APS wholesale power transactions. These Trading Books shall reflect the parties involved in a wholesale power transaction, including the beneficial owner of a transaction if a wholesale power contract is held in a different name.

5. **Training Requirements**

Each year, APS shall train all APS Pinnacle West Traders and all APS Traders regarding the Code of Conduct. At the conclusion of such training, each employee trained shall sign a certification that he or she will not be a conduit for improperly sharing information. APS's Regulatory Compliance Department shall retain such certifications for three years from certification.

V. PLANT OPERATIONS

STAFF RECOMMENDATION #1

- Conclusion: APS is not sufficiently reflecting the high net replacement power costs in its economic evaluations related to minimization of outage costs or spare parts procurement.
- Recommendation: Prepare and execute an action plan that will improve economic evaluations related to minimization of outage time.
-

Company Response: ACCEPTED

Discussion:

The Liberty Report concludes that the Company does not sufficiently consider net replacement costs when it conducts plant operation evaluations; specifically in the areas of spare part evaluations, minimization of outage costs and time through equipment redundancy and replacement evaluations, and early replacement of equipment.³² The report suggests that there is likely to be significant future value in reducing the duration of the Company's gas unit outages as every indication shows that market replacement power costs are steadily increasing.³³

In its testimony in the Rate Case, the Company agrees that net replacement power costs should be considered in spare part evaluation. Replacement costs are already a part of those evaluations. Capital spare parts are justified and purchased for inventory based on an economic evaluation that uses differential fuel cost and projected loss of generation, among other considerations such as expected purchase lead time and expected time between planned maintenance.³⁴

In addition, the Company follows a process of scheduling required planned outages using a production cost model that produces the least cost replacement power for the system. These outages are planned to minimize outage time in order to minimize replacement power cost.³⁵ However, the Company realizes that this process had not previously been formalized for Fossil Generation personnel.

³² See Liberty Report, p. 105.

³³ See Liberty Report, p. 103.

³⁴ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, p. 7.

³⁵ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, pp. 6-7.

Status: COMPLETE

Managerial Policy A-13, Economic Evaluation of Unit Outages/Unit Curtailments, has been developed to document the economic evaluation process for Fossil Generation. That policy is attached in the following pages.

In addition, the Company has evaluated all systems at base and intermediate load units with the objective of identifying spare parts and spare equipment needs. Spare parts and equipment have been purchased according to these risk, time and cost evaluations, which were conducted in accordance with Fossil Generation Managerial Policy A-6, Inventory Management, also attached in the following pages.



Managerial Policies Fossil Generation

No. A-13

Date: 08/06/07

Subject: ECONOMIC EVALUATION OF UNIT OUTAGES/UNIT CURTAILMENTS

PURPOSE

To document our established APS Fossil Generation structured Economic Evaluation Process to minimize unit outage time. This should continue to insure we minimize fuel differential, purchase power and O&M/Capital costs due to planned/unplanned Unit outages and generation curtailments.

OBJECTIVE

To minimize system fuel cost differential and purchase power cost while controlling O&M plant expenses, to meet system generation requirements. Each Plant Manager will insure that his plant organization follows this policy guidance:

GUIDANCE

Planned Outages:

For this policy, a planned outage is any Unit generation outage as identified in the current Approved Fuel Budget.

- Each plant will provide input to the Long Range outage forecast as requested periodicity, (quarterly) by the APS Marketing & Trading Technical Services Department. Input from the plants should state:
 1. Duration of required outage in days or hours.
 2. Description: Major, Minor/Hot Gas Path, Reliability, etc.
 3. Preferred start day and start time.
 4. Duration of any required testing or tuning time once positive generation is achieved and the unit is considered dispatch able.

Fossil Generation Managerial Policy A-13 - continued**Page 2**

- The Marketing & Trading Technical Services Department will run system economic cost models and provide feedback to each of the plants as to the preferred system fleet outage schedule that minimizes system fuel cost.
- Plants have the responsibility to insure that the economic models start and completion times minimize the Plant O&M expenses. The Plant and Marketing & Trading Technical Services Department are expected to reach agreement as to the lowest total system cost considering Plant O&M expenses.
- Once the planned system outage schedule has been approved by the VP of Fossil Generation, the schedule will be provided to Power Operations so planned transmission outages can be coordinated with planned unit outages.
- No changes to the schedule can be made without doing the following:
 1. Once Plant Management identifies a need to change the outage duration and or start and completion times, they must request the Marketing & Trading Technical Services Department perform a system cost study to determine the change in system production cost.
 2. Plant Management must identify the overall outage cost differential, either O&M or Capital from the schedule change.
 3. Plant Management must provide a recommendation to the VP of Fossil Generation with supporting system and Plant cost information and receive approval from the VP of Fossil Generation for extensions to outage duration.
 4. If Plant Management is reducing outage duration or moving the schedule within the Spring or Fall time frame, and agreement with Marketing has been reached, no approval is required from the VP of Fossil Generation.
- NOTE: Planned outage start times can be changed by ECC for system reliability purposes, without the approval of the VP of Fossil Generation, provided ECC has reviewed all alternatives actions and reviewed the same with plant management.

Fossil Generation Managerial Policy A-13 - continued
Page 3

Unplanned Outages:

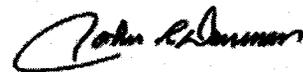
Any required or forced unit outage that is not included in the approved fuel budget.

- If Plant Management identifies the need to request an unplanned outage due to equipment problems or compliance problems, and it's something that cannot wait for a planned outage window, they should:
 1. Inform the Marketing floor and ECC as soon as the outage need is identified.
 2. Work with the Marketing Group to identify the least cost system outage window and the need to support system reliability.
- Request Marketing to identify the value of the lost generation and the system need for restoring the unit to service. Plant Management is expected to apply the necessary resources to minimize total cost.
- Inform the VP of Fossil Generation as soon as practical by e-mail or phone that a single unit unplanned outage is going to occur. Follow Fossil Generation Managerial Policy A-1 "Generation Event - Management Notification".

Unit Curtailments:

Any unit full load generation capability loss due to equipment problems or compliance problems.

- Plant Management will inform the Marketing floor and ECC of generation curtailments and the estimated duration of the curtailment once they are known.
- Plant Management will request Marketing to identify the value of the lost generation and the system need for restoring the unit's loss capability. Plant Management is expected to apply the necessary resources to minimize cost to restore the loss capability.
- Plant Management needs to refer to Fossil Managerial Policies A-1 and A-9 for required reporting of the lost generation and the required Root Cause investigations.



Signed: John R. Denman



Managerial Policies Fossil Generation

No. A-6

Date: 10/1/03

Subject: INVENTORY MANAGEMENT

PURPOSE

To provide guidelines for Plant Managers to establish procedures for an effective internal control structure for inventory management at facilities that have Warehouses which utilize MLIS. An assessment of the effectiveness of the internal control structure and procedures will be provided through management oversight.

A. Internal Control Structure

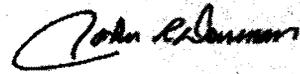
1. Procedures will exist to provide proper receiving, storage, access control and issuing of material in all Fossil Generation Warehouses.
2. Management will ensure appropriate approval of any addition of material to inventory storerooms.

B. Assessment of Internal Control Effectiveness

1. Ensure a physical inventory cycle count is performed within a 24-month period as required by FERC. The frequency of the cycle count will be determined by MLIS based on the dollar value and usage. The count will be performed by someone other than the person who receives and issues the material. The accuracy rate should be no lower than 98%.
2. Identify, document and process inventory that is no longer useable at the site or any other Fossil Generation unit. Material, which has no usage within the last thirty-six months, will be evaluated to determine if it is obsolete. The evaluation of alternative uses or use by another site will occur within a three month time period. Once the material is determined to be obsolete, it will be written off that month or no later than the current quarter in which it was determined to be obsolete.

Fossil Generation Managerial Policy A-6 - continued
Page 2

3. Management will provide the proper documentation and certification as evidence to the effectiveness of the internal controls in accordance to specified standards.



Signed: John R. Denman

STAFF RECOMMENDATION #2

Conclusion: The use of a 50/50 load forecast, coupled with the fast growth of the Phoenix Load Pocket, and system constraints of the Phoenix Load Pocket, makes achievement of targeted reserves less certain.

Recommendation: Analyze system reserve calculations using both a 50/50 and 90/10 load forecast, incorporating the constraints of the Phoenix Load Pocket.

Company Response: ACCEPTED

Discussion:

The Liberty Report notes that the Company carries a system reserve of between 12 and 15 percent and assumes that scheduled construction projects are completed on time. The report suggests that, if project completion times are not met, and given the uncertain weather stress experienced in the Phoenix area, the ability to maintain consistent reliability levels using reserves determined by a 50/50 load forecast may be called into question.³⁶ The utilization of a 90/10 load forecast methodology for system reserve determination, coupled with the 50/50 methodology currently prepared, may provide more appropriate results.³⁷

Company testimony notes that 90/10 load forecasts have been prepared and analyzed as part of the Company's past routine sensitivity analyses. Although the risks of exceeding the currently prepared 50/50 load forecast in the area of system reserves are well understood, the Company will seek ways to incorporate the 90/10 forecast more formally.³⁸

Status: COMPLETE

The Company's Load Forecasting Department prepares a 90/10 load forecast regularly as a sensitivity analysis during their annual forecast preparation. The "base case" 50/50 forecast, along with all sensitivity analyses including the 90/10 forecast, is provided to the Transmission Planning Department to assist in the discussion of system reserve requirements and the constraints of the Phoenix Load Pocket. These forecasts are also reviewed in the Company's annual meeting with Salt River Project where system reserve strategies for the Phoenix Load Pocket are discussed.

³⁶ See Liberty Report, p. 105.

³⁷ See Liberty Report, p. 107.

³⁸ See Rebuttal Testimony of Peter M. Ewen in the Rate Case, filed September 15, 2006, p. 26.

STAFF RECOMMENDATION #3

Conclusion: Major scheduled outages at the base load coal plants have had an appropriate length; however, outages at some of these plants from boiler leaks account for a conspicuously high percentage of net replacement power costs associated with these units.

Recommendation: Evaluate the replacement of boiler sections at Four Corners #5, Navajo #2 and Navajo #3 in light of current high net replacement power costs.

Company Response: ACCEPTED

Discussion:

The Liberty Report notes that, in 2005, boiler tube leaks accounted for 42 percent of the need for replacement power. As replacement power costs are high and expected to continue to rise, the report suggests that studying means for reducing such outages is worthwhile in an effort to minimize cost.³⁹ Any such study should include the effects of replacing boiler sections of these units.⁴⁰

As is stated in the Company's testimony in the Rate Case, boiler tube leaks on coal fired generating units are generally the major contributor to lost generation for the type and vintage units owned by the Company. New applications of boiler maintenance procedures and upgraded materials are continuously reviewed and researched in order to anticipate and reduce boiler tube leaks. Based on the comprehensive boiler tube leak reduction program that is in place at the Company (for the Four Corners units) and at Salt River Project (for the Navajo units), planned boiler component replacements are performed at each planned outage.⁴¹ Justification of boiler component replacement is based on several factors, but the primary factor has always been fuel cost differential, which takes into account replacement power cost.

Status: COMPLETE

The Company continually evaluates the replacement of boiler sections in the referenced units as a part of a comprehensive boiler tube leak reduction program that has been in place since March of 2000, in which boiler component replacement is justified primarily on fuel cost differential, which includes replacement power cost.

Attached is Fossil Generation Managerial Policy O-11, Integrated Boiler Tube Failure Reduction/Cycle Chemistry Improvement Program for Coal Units, the boiler tube leak reduction program mentioned above.

³⁹ See Liberty Report, p. 106.

⁴⁰ See Liberty Report, p. 107.

⁴¹ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, pp. 8-9.



Managerial Policies Fossil Generation

No. O-11

Date: 03/27/00; Rev. 02/15/07

Subject: **INTEGRATED BOILER TUBE FAILURE REDUCTION/CYCLE
CHEMISTRY IMPROVEMENT (BTFR/CCI) PROGRAM FOR COAL
UNITS and HRSGs**

PURPOSE

To convey to all the Generation Group personnel our commitment to an integrated BTFR/CCI Program, which has as its objective the planned correction, prevention and control of boiler tube failures (BTF) and of cycle chemistry corrosion and deposition problems at our Four Corners, Cholla, Redhawk and West Phoenix Power Plants. This policy is limited to units with a rating greater than 100 MW.

OBJECTIVE

Over the next four years, reduce the six-year average forced outage rates, due to boiler tube leaks at these four plants, to the following levels.

Four Corners 1, 2 & 3	2%
Four Corners 4 & 5	3%
Cholla 1, 2 & 3	1%
Redhawk 1 & 2	1%
West Phoenix 4 & 5	1%

PROGRAM POLICY STATEMENT

- Every BTF will be reported and documented in MAXIMO using a format that effectively tracks specific boiler and tube location, failure mechanism, root cause and verification, type of repair, completion of post repair inspection, documentation of compliance with Quality Control Manual, other areas inspected for the same failure mechanism, current and YTD statistics for BTF unit targets, and future preventative and control actions to be taken, and recommendations and costs for actions that will require a higher level of authority.

FOSSIL GENERATION MANAGERIAL POLICY O-11 - continued**Page 2**

- Every BTF failure will require a pre-repair inspection to determine the failure mechanism, root cause, the extent of the damage to the failed tube itself, and damage to other tubing in close proximity. Tubing in other locations subject to the same failure mechanism and root cause will be inspected during this outage or plans made to inspect at the next outage depending on difficulty of access.
- Every BTF repair will be inspected and/or tested to verify tube pressure integrity before repair is considered complete.
- Every BTF repair will follow the "APS Fossil Generation Boiler & Pressure Vessel Quality Assurance Program".
- All scheduled boiler maintenance overhauls will include all of the necessary inspection tools required to insure the long term health and reliability of all of the different tubing sections and high-energy pressure parts, such as headers and piping connections.
- All modes of boiler operations such as start-up, ramp rates, planned or forced removal from service, and boiler lay-ups will be controlled by established steam/tube metal temperature change rates, boiler chemistry lay-up and start-up guidelines.
- Continued boiler operation with known tube leaks is discouraged and should only be considered if power market conditions justify it and assumed risk of consequential damages are expected to be minimal.
- Use of fireside erosion/corrosion tube protection (such as shields, plasma spray, metal spraying, etc.) should only be used on a temporary basis until permanent changes can be made to insure that fireside erosion/corrosion can be documented as eliminated.
- The use of pad welding and weld overlays is discouraged. Pad welding may be used for temporary repairs of a tube leak if a permanent repair opportunity is within the foreseeable future, and the risk of repeat failure is recognized. Pad welding or weld overlay is acceptable as a long-term repair of erosion provided that EPRI guidelines are considered in the application.

FOSSIL GENERATION MANAGERIAL POLICY O-11 - continued**Page 3**

- The use of window welds is discouraged. Window welding will be used as a repair method when required to bring the unit back to service in a timely manner. Window welds installed, as a temporary repair will be replaced during the next outage of sufficient length to replace it (them). In cases where window welds are installed as a permanent repair, a recommendation for the replacement of the window weld repair areas (including total related cost and time frame) must be included in the tube leak repair documentation and the Action Plan must include an item for Plant/Corporate Management approval for approval of funds for the replacement or approval to leave the repaired section in permanent service.
- All core chemistry parameters relating to cycle chemistry will have established limits for each unit and will be continuously monitored and alarmed in the Control Room.
- All modes of unit operation will be controlled by established unit specific cycle chemistry limits, action levels and action-oriented procedures.
- Each plant will track cycle chemistry performance against the core parameter limits as per percent of time within target ranges monthly. Minimum target level of 95% compliance.
- Each plant will provide Quarterly Summary Target Reports to the Vice President of Fossil Generation, for lost Generation due to boiler tube leaks, as compared to the target for each unit YTD, plus those Action Plans developed to address the required corrective action. Plant teams will share information following each outage and Action Plan updates quarterly so that Corporate can submit Generation Business Unit reports to all plants on a quarterly basis.

SHORT TERM OBJECTIVE

- Establish Corporate and Plant BTFR/CCI Program Teams. The Corporate Team will have the Fossil Technical Support Manager as the overall Program Coordinator, with additional members knowledgeable in the areas of metallurgy, chemistry, engineering and Plant Team Coordinators from each plant. Each plant will have a team or teams that will consist of a Coordinator and seasoned representatives from Operations, Maintenance, Engineering and Chemistry.
- Develop and implement Management, Engineering, Operations, and Maintenance Directives and/or Procedures that address BTF and Cycle Chemistry "Controllable Parameters".
- Define and prioritize current boiler tube failure and cycle chemistry corrosion and/or deposition problem in terms of unit affected, total number of failures by failure mechanism. Build Action Plans to correct unit BTF based on megawatt hours lost and system generation cost.

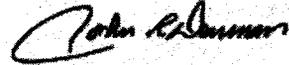
FOSSIL GENERATION MANAGERIAL POLICY O-11 - continued

Page 4

- Use MAXIMO to implement a centralized computed-based BTF monitoring and reporting system.
- Establish optimum cycle chemistry for all units and insure "core" cycle chemistry instrumentation is installed and working on each unit.
- Develop cycle chemistry technical indices for all units and systems.

LONG TERM GOALS

- Incur zero repeat BTF.
- Incur zero cycle chemistry influenced power generation equipment availability loss.



Signed: John R. Denman

STAFF RECOMMENDATION #4

- Conclusion:** The level of operator and maintenance errors at Four Corners Unit #3 and Navajo Unit #3 is high.
- Recommendation:** Conduct a centralized review of operator and maintenance errors at APS base-loaded coal plants and at Navajo, in order to assure that root causes are being correctly identified and addressed; determine the reasons why such errors appear to be concentrated at Four Corners Unit #3 and Navajo Unit #3.

Company Response: ACCEPTED IN PART

Discussion:

The Liberty Report states that their review of fossil plant outages revealed that the number of outages caused by operator or maintenance errors appeared unusual, and that these outages were concentrated at Four Corners Unit #3 and Navajo Unit #3. In light of this fact, the report suggests that the true root causes of these outages may include insufficient personnel or insufficient management support of the training process, and that the root causes for these errors need review.⁴²

In its testimony in the Rate Case, the Company notes that it is important to clarify that all outages at all its plants are already investigated to find root causes. Daily reports are prepared and reviewed for both Four Corners and Navajo on plant operation and status, and monthly lost generation reports are also prepared and reviewed. Four Corners reports are reviewed with plant management. Fossil Generation personnel attend quarterly meetings of Navajo plant owners where Salt River Project, the operating agent for the Navajo plants, provides and reviews detailed information about all aspects of plant operation.⁴³ For the reasons given in that testimony, the Company does not agree that there is an unusual pattern of operator errors at Four Corners Unit #3 and Navajo Unit #3, and believes that the current practice of root cause analysis, with follow-up corrective actions if needed, provides adequate information to keep performance errors to the lowest level possible.⁴⁴

However, the Company does not object to conducting a centralized review of the Fossil Generation Department existing root cause policies and procedures.

⁴² See Liberty Report, p. 99.

⁴³ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, pp. 9-10.

⁴⁴ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, p. 10.

Status: COMPLETE

Fossil Generation Department personnel have conducted a centralized review of all 2006 outages and events at the Four Corners, Cholla and Navajo generating plants. Appropriate root cause evaluations have been undertaken or are completed, and corrective actions have been identified and are being implemented. As part of this review, the department's existing root cause policies and procedures were reviewed with plant management and updated and/or enhanced as appropriate.

Root cause review for fossil plants are conducted under the following three policies, each of which are attached in the following pages:

1. Managerial Policy A-3: Incident Reports
Attached here with the root cause decision tree utilized in accordance with the policy.
2. Managerial Policy A-9: Lost Generation Analysis and Report
Attached here with a sample report format.
3. Managerial Policy O-16: "Root Cause" Investigation
Attached here.



Managerial Policies Fossil Generation

No. A-3

Date: 01/29/81; Rev. 02/24/00

Subject: INCIDENT REPORTS

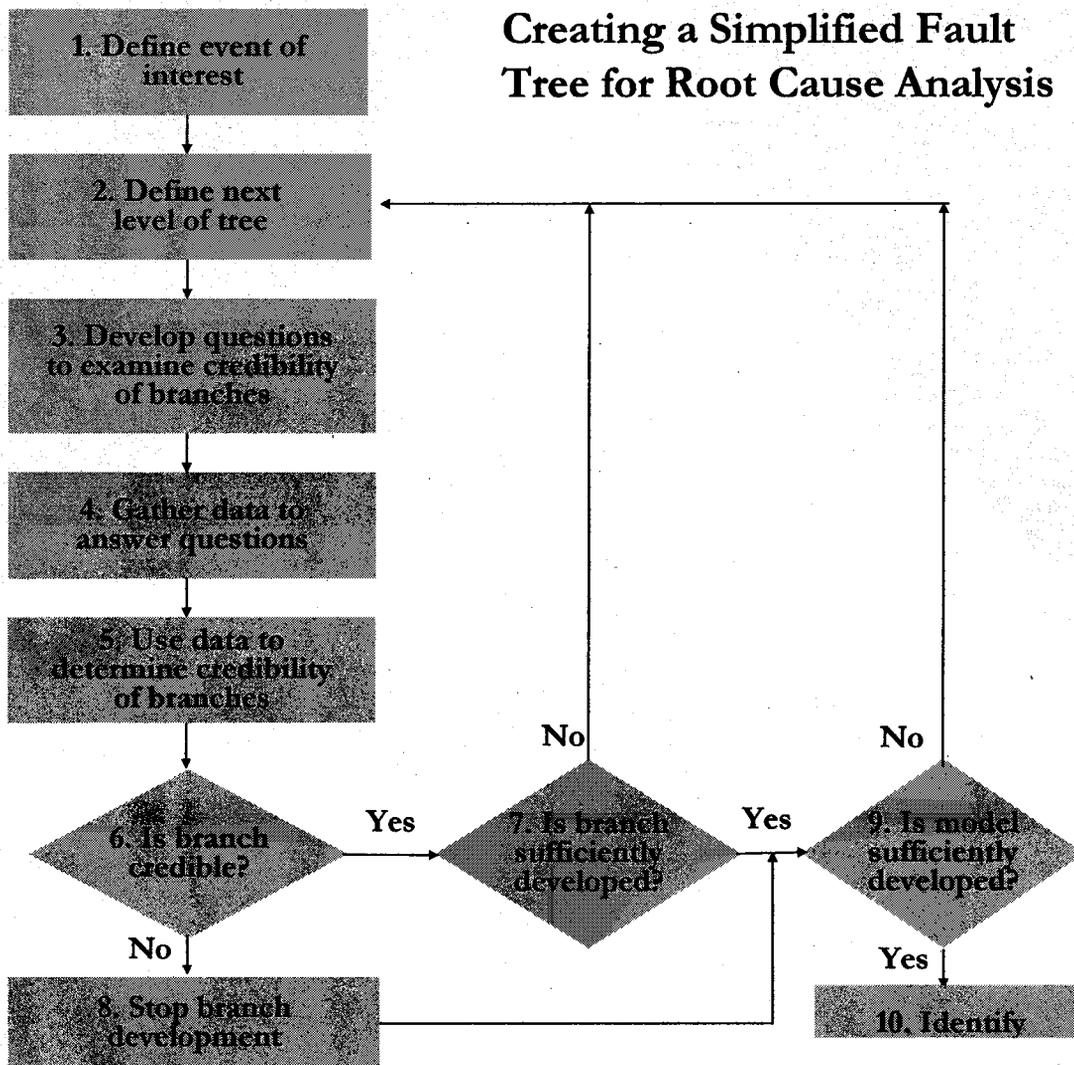
Each Plant Manager will develop, establish and maintain a "root cause" incident investigation and reporting system which will provide a timely record of any unusual or serious operational maintenance incidents which occur in the Plant, adjacent Switchyards, and support facilities. The "Bobby Jones" (BJ) Investigation template should be the basic investigation system used across Fossil to determine "root cause". The reporting system will require that incident investigation take place for equipment damage, unexplainable unit trips, operator or maintenance error, personal injury, or any other incident that may require investigation.

Investigation results shall be used to help the Plant organization improve its overall level of performance. Level I Action Plans will be developed for follow-up as required to bring closure to the incident to the incident.

A handwritten signature in cursive script, reading 'John R. Denman', is positioned above a horizontal line.

Signed: John R. Denman

Creating a Simplified Fault Tree for Root Cause Analysis



The "Bobby Jones" Investigation Template



Managerial Policies Fossil Generation

No. A-9

Date: 6/15/98; Rev. 05/03/07

Subject: LOST GENERATION ANALYSIS AND REPORT

Each coal plant, Redhawk and West Phoenix Combined Cycle Units are required annually to prepare a lost generation report for each unit indicating major equipment area impacted, megawatt-hours of lost generation, equivalent availability lost in %, and root cause.

From this report, determine the areas with the most lost generation, and using the root cause, determine an action plan to alleviate, or minimize, future lost generation. The action plan must indicate major action steps, target dates and responsible individual.

The calendar year Lost Generation Report is to be submitted to the Vice President, Fossil, by the end of the first quarter, March 31st, each year.

Quarterly Lost Generation update reports are to be submitted by the 30th of the month following the quarter using the same report format with progress status on the remedial action plans.

See the attached sample report for format.

A handwritten signature in cursive script, reading 'John R. Denman', is positioned above a horizontal line.

Signed: John R. Denman

FOSSIL GEN MGR POLICY A-9

UNIT	SYSTEM	ACTION PLAN	RESPONSIBLE PERSON	DUE DATE
1				
2				
3				
4				

ATTACHMENT
FOSSIL GEN MGR POLICY A-9

POWER PLANT
MEGAWATT HOUR LOSS SUMMARY REPORT
____ QUARTER ____

UNIT 1

MEGAWATT HOUR LOSS AREA	YTD MWH	EMF %	ROOT CAUSE

UNIT 2

MEGAWATT HOUR LOSS AREA	YTD MWH	EMF %	ROOT CAUSE

UNIT 3

MEGAWATT HOUR LOSS AREA	YTD MWH	EMF %	ROOT CAUSE

UNIT 4

MEGAWATT HOUR LOSS AREA	YTD MWH	EMF %	ROOT CAUSE



Managerial Policies Fossil Generation

No. O-16

Date: 05/31/01; Rev. 07/08/02

Subject: "ROOT CAUSE" INVESTIGATION

PURPOSE

To ensure the safe, reliable operation of our Fossil Plant facilities and to help manage the resources required to operate and maintain our facilities. The following guidelines will be used at all of the facilities, to investigate unwanted event happenings which result in either personnel accidents, serious equipment damage, or sizeable generation curtailments.

OBJECTIVES

- To help reduce accidents to personnel and equipment by investigating unwanted events to establish Root Cause, taking necessary corrective actions and performing necessary organization communication to avoid repeat events in the future.
- To help manage future resource requirements because recurrence of unwanted events is reduced.
- To help reduce EFOR and, therefore, increase the reliability of our facilities due to reduction in the amount of lost generation resulting from unwanted events.

GUIDELINES

Each facility will perform a formal or informal Root Cause Analysis of the following unwanted events and follow-up with required corrective actions based on correctable opportunities found:

FORMAL: If the unwanted event leads to serious personnel injury or serious equipment damage, and/or large amount of lost generation, and the Root Cause is not clearly understood, a formal Root Cause team investigation will be performed.

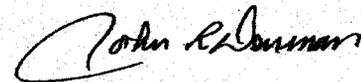
INFORMAL: If the Root Cause of an unwanted event is clearly understood, and all of the correctable opportunities are understood, then a single person investigation and documentation is all that is required.

UNWANTED EVENTS

- Any personnel injury that is recorded on the OSHA Log or is considered a serious near miss.
- Any unexpected equipment damage which results in the event meeting the accidental damage reporting requirements of the ACC, or is an unexplained failure which needs explanation to ensure future equipment reliability.
- Any unwanted operational or maintenance event which resulted in loss of generation equal to or more than the sum of 50% of the unit net accredited rating for eight hours and or an unexplained unit trip.
- Any planned overhaul delay which results in the loss of unit generation equal to or more than 5% of the original scheduled duration.
- Any generation protection system misoperation which meets the reporting requirements as stated in Fossil Generation Managerial Policy O-15.

REPORTING

Each facility will maintain a record of the Root Cause performed, with supporting documentation, actions taken to prevent a repeat of the unwanted event, and records of organizational communications concerning Root Cause findings and recommendations. A summary log of the Root Cause Analysis performed and brief outline of findings and actions taken will be provided to the Vice President of Fossil Generation every six months, or as requested by the Vice President.



Signed: John R. Denman

STAFF RECOMMENDATION #5

Conclusion: Improving West Phoenix Unit #5 availability is important to the dispatch and keeping net replacement power costs at minimum levels.

Recommendation: Implement for West Phoenix #5 the requirement for root cause analysis when generation is lost.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that the Company is considering implementation of the fossil wide root cause analysis policy at West Phoenix Units #4 and #5, and recommends that the analysis should be implemented.⁴⁵

In the Company's testimony in the Rate Case, it stated that, at the time of the report, West Phoenix Unit #5 was already required to comply, and does comply, with the same root cause analysis requirement that applies to the remainder of the Company's fossil generating plants.⁴⁶

Status: COMPLETE

West Phoenix Unit #5 complies with all root cause analysis requirements. These requirements have been reviewed and updated where appropriate, and are included in the analysis of Plant Operations Staff Recommendation #4 earlier in this report.

⁴⁵ See Liberty Report, p. 102.

⁴⁶ See Rebuttal Testimony of John R. Denman in the Rate Case, filed September 15, 2006, p. 11.

VI. PURCHASED POWER AND OFF-SYSTEM SALES

STAFF RECOMMENDATION #1

Conclusion(s): The APS internal documentation separating the activities of utility versus non-utility electric power trading is sufficient, but the external data presented in FERC forms does not make the appropriate distinctions between this information.

The APS and non-utility trading operations are not sufficiently physically segregated.

Recommendation: Clearly segregate utility and non-utility trading in all operations and reporting to ensure that utility trading is conducted to maximize utility opportunities.

Company Response: ACCEPTED IN PART

Discussion:

This recommendation is very closely related to the discussion in Hedging and Risk Management Staff Recommendation #2 regarding the separation of utility and non-utility activities. The Liberty Report concludes that, in some publicly available documents, specifically FERC Form 1, electric power purchase and sale data related to both regulated and unregulated APS activities is not delineated sufficiently.⁴⁷

In addition, Liberty notes that the Company's utility and non-utility traders operate in the same markets and with common counterparties, but do so without physical separation, which Liberty believes creates too great a risk of opportunity for sharing between individual traders and fails to assure clear separation of trading activities.⁴⁸

The Company has acknowledged that one trading floor provides the site for wholesale trading for both utility and non-utility trading. Separation issues were addressed in Code of Conduct proceedings at the Commission after the Liberty Report was issued. Policies and procedures adopted in those proceedings prohibit traders who handle the Company's system from providing trading services for affiliates.⁴⁹ At the time of the testimony, the Company had already begun the implementation of additional physical separation and controls to respond to this recommendation.⁵⁰

⁴⁷ See Liberty Report, p. 121.

⁴⁸ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, p. 15.

⁴⁹ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, pp. 47-48.

⁵⁰ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 48.

Status: COMPLETE

The Company's Code of Conduct Policy No. 11, Provision of Trading Floor Services by APS, which addresses the separation and reporting issues cited in the Liberty Report, is attached to Staff Recommendation #2, Hedging and Risk Management, earlier in this report. The Company's implementation of additional separation and controls is also addressed in that section.

With regard to FERC reporting, the Company follows all applicable reporting requirements for each of the varied FERC forms that it files. The FERC does not recognize, for reporting purposes, a distinction between utility and non-utility activities. As the Liberty Report acknowledges, the Company's internal documentation separating the activities of utility versus non-utility electric power trading is sufficient.⁵¹

In addition, as mentioned in Staff Recommendation #2, Hedging and Risk Management earlier in this report, the Company is moving to eliminate its non-utility activities.

⁵¹ See Liberty Report, p. 121.

STAFF RECOMMENDATION #2

Conclusion: PWCC made some inappropriate commitments to trades using utility assets in 2005; but APS has eliminated them, transferred their margins to the utility account of APS, and begun changes to prevent the future use of utility assets by affiliates.

Recommendation: Complete the process of preventing future affiliate use of utility assets and examine means for continuing transmission optimization transactions through some form of sharing mechanism.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that an improper use of a utility transmission path by traders at Pinnacle West Capital occurred in 2005, although acknowledges that after Company personnel became aware of this unauthorized use, any margins secured from these transactions were properly credited to utility accounts.⁵² At the time of the report, the Company was in the process of implementing internal procedures that will prevent a recurrence of this or any similar use of utility resources by affiliates.⁵³ The report also states that, while it is inappropriate for the Company to conduct transmission optimization transactions because of inherent future market risk, there may be means for an arrangement between parties that would carry only a moderate level of risk yet still be profitable for the utility.⁵⁴

The Company noted in its testimony in the Rate Case that the Company's Code of Conduct would include policies and procedures governing the trading floor and would prohibit transactions such as the one described above.⁵⁵

Status: COMPLETE

The Company's Code of Conduct Policy #11, Provision of Trading Floor Services by APS, addresses the improper use of utility resources by affiliates and is attached to Staff Recommendation #2, Hedging and Risk Management, earlier in this report. Also, as mentioned in Staff Recommendation #2, Hedging and Risk Management earlier in this report, the Company is moving to eliminate its non-utility activities.

In addition, the Company continually pursues market opportunities to optimize transmission pathways by making purchase or off-system sales transactions that appropriately utilize existing purchased transmission capacity.

⁵² See Liberty Report, p. 119.

⁵³ See Direct Testimony of John Antonuk in the Rate Case, filed August 18, 2006, p. 16.

⁵⁴ See Liberty Report, p. 122.

⁵⁵ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 48.

VII. FINANCIAL AUDIT OF PSA COSTS**STAFF RECOMMENDATION #1**

Conclusion: APS audits ...have yet to address PSA filing preparation.

Recommendation: Conduct periodic internal audits of the PSA filings to verify the soundness, completeness, and accuracy of the activities that produce them, the first such audit to be conducted as part of the next audit plan.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that, at the time of the report, no internal audits had yet been conducted on the Company's in-house procedures and sources used to develop the monthly PSA reports required to be filed with the Commission. The report acknowledges that the development of the PSA reports had started recently, but Liberty believed it was time to begin periodic examination of those filings and the processes used to develop them as there is a high importance that they are prepared accurately.⁵⁶

The Company places emphasis on the accounting and auditing support required to make the PSA filings accurate and transparent. The Company is committed to improving our procedures regarding PSA controls, including those relating to annual internal audits of the PSA.⁵⁷

Status: COMPLETE

The Pinnacle West Internal Audit Department incorporated a PSA Filings Audit in the 2007 Audit Plan. The first audit was completed in July of 2007. The objective of this audit is to gain an understanding of the preparation of monthly PSA filings and to verify the integrity and reliability of the information. The PSA Filings Audit is a recurring audit that will be conducted periodically.

⁵⁶ See Liberty Report, p. 137.

⁵⁷ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 49.

STAFF RECOMMENDATION #2

Conclusion: APS documents its filing information well, but lacks a formal written procedure addressing preparation of the monthly PSA filings.

Recommendation: Develop a written policy and procedure for the preparation of the confidential PSA filings.

Company Response: ACCEPTED

Discussion:

The Liberty Report found that, while Company personnel were able to provide an oral description of the PSA reporting development process that allowed Liberty to verify that the PSA filings are well documented and supported, no formal written narrative procedure had not been prepared.⁵⁸

Liberty stated that the process of verifying accuracy and auditing the PSA reporting process was made difficult by the lack of a formal procedure.⁵⁹ Written procedures assist in assuring that filings are consistent and complete, and that procedures are helpful to assist employees required to prepare the filings in the absence of employees who are assigned that task.⁶⁰

As discussed in its testimony in the Rate Case, the Company was implementing and improving procedures and documentation regarding the PSA filings.⁶¹ At the time the Company filed its rebuttal testimony, documentation outlining the procedure for preparation of the monthly PSA filings had been completed.⁶²

However, in Decision No. 69663, the Commission adopted a prospective PSA mechanism that requires calculations and supporting documentation not necessary in the then current PSA reporting.⁶³ Therefore, documentation supporting the calculation and filing of the monthly PSA reports must be revised.

Status: IN PROGRESS

The Company is in the process of revising its documentation supporting the monthly PSA filings to include new procedures required by the adoption of a prospective PSA in Decision No. 69663. This updated procedure is expected to be available by the fourth quarter of 2007.

⁵⁸ See Liberty Report, p. 138.

⁵⁹ See Liberty Report, p. 139.

⁶⁰ See Liberty Report, p. 142.

⁶¹ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 49.

⁶² See Rebuttal Testimony of Peter M. Ewen in the Rate Case, filed September 15, 2006, p. 26.

⁶³ See ACC Decision No. 69663, p. 112.

STAFF RECOMMENDATION #3

Conclusion: Despite their general accuracy, including the total costs of generation, APS over- or under-stated individual coal, oil, and gas generation costs due to a misclassification of costs among the three types of generation.

Recommendation: Correct PSA reporting methods to assure more accurate classification and reporting of coal, oil, and gas generation information.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that some minor discrepancies related to tracing supporting schedule information to summary pages for fuel cost elements in the confidential portion of the PSA filings were noted. The report construed these discrepancies as a misclassification of cost. While totals are accurate, the report recommends that some minor improvements in presentation of these cost elements are warranted to allow for easier verification of cost.⁶⁴

While the Company does not believe that reporting methodology construes a misclassification of cost, it has no objection to present the costs as recommended by the Liberty Report.⁶⁵

Status: COMPLETE

The Company has revised its supporting schedule information in the confidential portion of the PSA filing to reflect the above recommended method of reporting fuel cost.

⁶⁴ See Liberty Report, pp. 138-139.

⁶⁵ See Rebuttal Testimony of Peter M. Ewen in the Rate Case, filed September 15, 2006, p. 26.

STAFF RECOMMENDATION #4

Conclusion: Liberty's detail review of the non-confidential PSA [o]ver/[u]nder values found them to be accurate, but they should be more transparently supported.

Recommendation: Revise the PSA confidential filing format to provide a sufficient level of detail to support the calculation of the components contained within PSA non-confidential filings.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that, at the time of the audit, the confidential PSA filing did not provide the data necessary to arrive at the book fuel and purchased power costs reflected on the non-confidential filing, especially as no written procedure was available to explain how the non-confidential values are developed.⁶⁶ Confidential filings should provide support for the non-confidential filings so as to give transparency and assistance to Commission Staff in auditing and evaluating the monthly PSA filings together.⁶⁷

The Company places an emphasis on the accounting and auditing support required to develop the PSA data, and agrees that the documentation can be more transparent. Formal written procedures were in development at the time the Company's testimony in the Rate Case was filed.⁶⁸

Status: COMPLETE

The Company has revised current schedules and prepared new schedules for inclusion in the confidential portion of the monthly PSA filing that provide the additional support necessary to review the non-confidential PSA monthly filing. These schedules were initially provided in the August, 2006 PSA report and have been included since that time.

⁶⁶ See Liberty Report, p. 141.

⁶⁷ See Liberty Report, p. 142.

⁶⁸ See Rebuttal Testimony of Donald E. Brandt in the Rate Case, filed September 15, 2006, p. 49.

STAFF RECOMMENDATION #5

Conclusion: A review of APS handling of supplemental fuel charges and refunds indicates that supplemental charges and refunds have been accounted for in the PSA when applicable; the accounting methods are not consistent for purposes of recording refunds, but the inconsistency has not had a material impact on the PSA.

Recommendation: Closely review and monitor adjustment to fuel costs to assure that supplemental charges and refunds appropriately consider the impact on inventory values and fuel expenses for financial reporting purposes.

Company Response: ACCEPTED

Discussion:

The Liberty Report states that supplemental charges and refunds should be booked in a manner that tracks as closely as possible the impact such events would have had on the product had it been correctly priced at the time. The report cites a specific instance where a refund was booked to expense when purchases attributable to the refund may have been presumed to still be in inventory rather than already burned. A split method of booking part of the refund to expense and part to inventory would have corresponded more accurately to actual consumption.⁶⁹ The report acknowledges that the Company's method in this instance did not materially affect the PSA.

The Company, in its testimony in the Rate Case, agrees that, in the one specific instance reviewed by Liberty, the refund dollars booked should have been split between expense and inventory.⁷⁰

Status: COMPLETE

The Company's accounting personnel have been trained to understand and implement the proper accounting method(s) for booking supplemental charges, refunds, and other adjustments to fuel expense and/or inventory values.

⁶⁹ See Liberty Report, p. 141.

⁷⁰ See Rebuttal Testimony of Laura L. Rockenberger in the Rate Case, filed September 15, 2006, p. 27.