

MEMORANDUM

2004 MAR 15 P 12: 35

TO: Docket Control
FROM: Ernest G. Johnson *EGJ*
Director
Utilities Division

AZ COMP COMMISSION
DOCUMENT CONTROL

DATE: March 15, 2004

RE: ENVIRONMENTAL RISK MANAGEMENT WORKSHOPS PROGRESS REPORT
(DOCKET NOS. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, E-01933A-02-0069 AND E-01933A-98-0471)

Attached is the Staff Report on the progress of the Environmental Risk Management Workshops required by Decision No. 65743 (Track B).

Staff recommends the continuation of its series of Environmental Risk Management Workshops, with the intent of incorporating actions developed in the DSM Workshop process and the Environmental Portfolio Standard Workshop process.

Staff believes that it is too soon to determine if hearings will be needed.

Staff recommends that if hearings are deemed to be appropriate in the future, the Commission should consider having joint hearings on the three major areas of interest: DSM, renewables, and environmental risk management.

EGJ:RTW:rdp

Originator: Ray T. Williamson

Attachment: Original and fourteen copies

Service List for: ENVIRONMENTAL RISK MANAGEMENT WORKSHOPS

Docket Nos. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, E-01933A-02-0069
AND E-01933A-98-0471

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**STAFF REPORT
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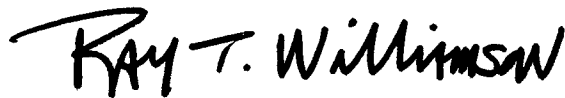
DOCKET NOS. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, E-01933A-02-0069 AND E-01933A-98-0471

ENVIRONMENTAL RISK MANAGEMENT WORKSHOPS PROGRESS REPORT

MARCH 2004

STAFF ACKNOWLEDGMENT

The Staff Report on Environmental Risk Management Workshops Progress, Docket Nos. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, E-01933A-02-0069 and E-01933A-98-0471, was the responsibility of the Staff members listed below. Ray T. Williamson was responsible for the review and analysis.

A handwritten signature in black ink that reads "Ray T. Williamson". The signature is written in a cursive, flowing style with a large initial "R" and a distinct "T".

RAY T. WILLIAMSON
Utilities Engineer

EXECUTIVE SUMMARY

The Commission directed Staff to commence a series of workshops on environmental risk management in the "Track B" order (Decision No. 65743) on March 14, 2003.

The two primary purposes of the workshops are to:

1. Explore the development of an environmental risk management policy, including an examination of the possible costs and benefits of the policy.
2. In order to improve the Commission's ability to properly weigh and assess environmental factors, develop a set of criteria that are knowable and measurable, which can be used in future solicitations to weigh the environmental impact of offers received in the solicitation process.

Staff conducted five workshops from September 26, 2003, through February 13, 2004.

The Environmental Risk Management Workshop process has been successful so far in raising and discussing some of the important issues related to environmental risk management policy. However, more workshops need to be held in order to fully explore the subject.

Progress is being made in the DSM Workshop process and the Environmental Portfolio Standard Workshop process. Staff recommends the continuation of its series of Environmental Risk Management Workshops, with the intent of incorporating actions developed in the other two processes.

On the subject of hearings, Staff believes that it is too soon to determine if hearings will be needed. Once the workshops attempt to start quantification of risks and costs and benefits of various proposed approaches, it should become obvious if there is substantial agreement on the facts and recommendations and whether there will be a need to have formal hearings. If hearings are deemed to be appropriate, there might be some logic in having joint hearings on the three major areas of interest: DSM, renewables, and environmental risk management.

Staff recommends filing a final report with recommendations after the workshops have concluded. Included in the report would be recommendations of whether or not hearings should be held. Staff anticipates that the final report would be filed by the end of calendar year 2004.

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Introduction

The Arizona Corporation Commission entered Decision No. 65743 (the Track B order) on March 14, 2003. The order directed Staff to “. . . facilitate a workshop process to explore the development of a demand-side management (“DSM”) policy and an environmental risk management policy, with such exploration to include an examination of the possible costs and benefits of the respective policies, and to file a report, within 12 months from the date of this Decision, informing the Commission of the progress achieved in the workshops, including a Staff recommendation on whether hearings should be held”

Staff bifurcated the process, holding parallel series of workshops on both DSM and Environmental Risk Management. The first Environmental Risk Management Workshop was held on September 26, 2003. Subsequent workshops were held on October 30, 2003; December 5, 2003; January 15, 2003; and February 13, 2003. Participants included representatives from utilities, state agencies, cities, environmental advocacy groups, utility investors, large industrial customers, energy efficiency advocates, and members of the renewable energy industry. A list of participants is in the attached Schedule 1.

Purpose of the Workshops

As stated above, one specified purpose of the workshops is to help the Commission in developing a policy for environmental risk management. In addition, during the Track B hearing process, there was ample discussion of environmental issues and impacts. The Commission felt that it did not have the information or ability to “properly assess and weigh environmental factors” related to wholesale electricity solicitations that were ordered by the Commission in the Track B Decision.

So, the two primary purposes of the workshops are to:

1. Explore the development of an environmental risk management policy, including an examination of the possible costs and benefits of the policy.
2. In order to improve the Commission’s ability to properly weigh and assess environmental factors, develop a set of criteria that are knowable and measurable, which can be used in future solicitations to weigh the environmental impact of offers received in the solicitation process.

Brainstorming Session at the First Workshop

At the very first workshop, the group completed a brainstorming session in which it listed various ideas and issues that should be discussed in the upcoming workshop process. The issues were:

1. Approaches for assessing and analyzing environmental risks

2. Approaches for mitigating the environmental risks, including costs and benefits of mitigation
3. Global warming/green house gases
4. Literature search: other state policies
5. Regulatory: range of proposals to deal with multiple pollutants: Federal or other
6. Externalities
7. Context: reliability
8. Realistic expectations for any mitigation approaches, DSM and others
9. Ensure utilities get credit for strategies already implemented
10. What has been done in last 13 years in AZ utility sectors
11. Availability of supply of resource and ability to replace resource
12. How to analyze costs and benefits
13. Costs translate into rates
14. Look at range of alternatives other than mitigation (maybe indirect)
15. Consider urban versus rural differences
16. Put overall effect in context
17. Quantitative way to evaluate environmental impacts in bids
18. How should utility weigh environmental risks against reliability and costs in Track B bids
19. Look at environmental aspects of 2003 bids
20. Ownership and how resources are dispatched
21. DSM: evaluating the relative effectiveness of various parties being active DSM participants
22. Environment: Just air and water? Or other?
23. Scope of air
24. Recovery mechanism(s) for additional environmental costs
25. Explore Commission action related to other agencies/jurisdictions
26. Education on costs and benefits of various mitigation measures
27. Identification of environmental risks

Presentations by Utilities

At the second workshop, three utilities made presentations about what they had done to manage environmental risks. There were multiple presentations on various subjects:

- APS: "Air Pollutant Emissions: Regulatory Outlook for Power Generation."
- APS: "Track B Environmental Risk Analysis."
- APS: "Environmental Risk Management at APS."
- TEP: "TEP's Track B Evaluation Process."
- TEP: "History and Status of Demand Reduction and Renewable Energy Programs: 1993 to 2003."
- AEPCO: "Environmental Risk Management Efforts of Arizona Electric Power Cooperative, Inc."

Arizona Public Service Company ("APS") gave a presentation entitled "Air Pollutant Emissions: Regulatory Outlook for Power Generation." APS discussed the Clean Air Act and Global Climate Change legislation. APS showed charts of power sector emission reductions and a chart that described when various pollutant requirements will go into effect. There was a discussion of Mercury Maximum Achievable Control Technology ("MACT") and that EPA will propose a MACT Rule by December 2003 and will have a final rule in December 2004. APS showed U.S. maps of mercury depositions and charts that showed where the emissions originate. APS discussed ozone standards and showed maps of areas not in compliance with the standards. APS showed information on particulate and visibility issues, discussed SO₂ milestones, new source review reform, and global climate change issues. Finally, APS showed a comparison of various emission caps and deadlines and NO_x reduction information.

Next, Tucson Electric Power Company ("TEP") gave a presentation entitled "TEP's Track B Evaluation Process." TEP described the evaluation process that TEP used for its Track B solicitations, which included environmental attributes. Other criteria were product, price, deliverability, reliability, and counterparty credit. The environmental attributes are used as a tie breaker when "all other things are equal." Of the five bidders, four were combustion turbines or combined cycle gas units and one was undefined system resource.

APS presented "Track B Environmental Risk Analysis." APS developed an Environmental Matrix to use in evaluating its Track B solicitation bids. The matrix included ten categories. Seven categories were for air pollutants, one was for water use, one was for distance from population, and one was for amounts of penalties in the past five years. Scores were assigned for each category. Results showed that the bidders' "scores" were close, all in the 34-39 range. There were apparent discrepancies between submittals. The matrix does not work well for grid power marketers. Definitions need to be clear to ensure consistent evaluations. Weighting between factors was not addressed.

APS next gave a presentation entitled "Environmental Risk Management at APS." A number of APS' environmental leadership activities were cited. APS emissions results for NO_x, PM₁₀, CO₂, and SO₂ were shown and compared with industry averages. The APS emission rates for CO₂ are declining, even though total tons of emissions are increasing (due to increasing electrical demand because of customer growth). APS described its effort to reduce greenhouse gas emissions. The efforts include up-rating of the Palo Verde power plant, new natural gas power plants, tree planting programs, and new technologies and fuels such as solar, hydrogen, bio-mass, geothermal, and bio-diesel. APS showed charts depicting the increased use of solar by APS since 1996 and the planned and installed capacity of other renewables from 2003 through 2006. APS finished with a description of the APS 100% hydrogen van project. The van has driven 4,280 miles to date.

TEP gave a presentation entitled "History and Status of Demand Reduction and Renewable Energy Programs: 1993 to 2003." TEP started with the 1993 Integrated Resource Planning process and how that led to demand reduction programs at TEP. TEP worked with its 14 largest customers to do an energy review. TEP began testing microturbines, fuel cells, wind

turbines, and solar photovoltaics ("PV"). The results were that no new net generation capacity has been added since 1990, except for solar. Around 100 MW of 1973 vintage capacity was replaced by 95 MW of 2002 vintage combustion turbine capacity, which is more efficient and less polluting. Landfill gas fuel replaced 5+ MW of conventional fuel. TEP conducted wind survey work over 8 years on 20 sites. Landfill gas currently provides 0.5% of TEP's annual energy. The SunShare PV Program has resulted in 160 kW of customer-sited solar generation. The Springville Power Station includes 3.8 MW of photovoltaic production.

AEPCO gave a presentation about the environmental risk management efforts of Arizona Electric Power Cooperative, Inc.

Presentations by Outside Organizations

For the third workshop, the Electric Power Research Institute ("EPRI") made a presentation entitled "Framework for the Future: Implications for Environment and Generation." A synopsis of the presentation is:

A two-decade investment deficit has seriously compromised the reliability of the power system. Wholesale markets are increasingly thwarted by an aging U.S. power delivery system. Improvement to the system is limited while demand for more reliable, high-quality electricity increases. There is an inconsistent and conflicting set of regulatory rules and a highly uncertain regulatory framework.

Overall, utilities face barriers to effective planning, an unwillingness to invest, and a stalemate in strategy for achieving a way out of the current dilemma. The vision does not match the reality. The vision of lowering the cost of reliable, safe, clean electric service is replaced with the reality of higher cost and lower reliability. The vision of attracting capital for infrastructure development is replaced with the reality of reduced investment confidence and incentive. The vision of enabling greater consumer choice is replaced with the reality of loss of accountability to consumers. The vision of greater economic efficiency is replaced with the reality of greater financial risk. The vision of leveling the competitive playing field is replaced with the reality of market volatility.

There are multiple pathways to the 21st Century transformation. An array of possible routes lie between a reliance on regulation and a reliance on markets. Some form of blended approach will likely prove to be the most effective pathway forward.

EPRI's vision is that we will have a highly reliable, affordable, environmentally friendly power system that will provide essential public services while supporting the aspirations of all classes of consumers. Regional and ownership diversity will result while supporting an economic framework of efficient, transparent markets. Operational effectiveness will be ensured while impact on the environment will be minimized.

EPRI's vision of a transformed electricity enterprise includes a digitized power delivery infrastructure, integrated electricity and communications, a 2-way energy/information portal, integrated distributed resources, and a robust advanced power generation portfolio.

Implications for Market Participants. New trading markets will exist for all energy assets. There will be a monetization of demand response, carbon emissions, and other resources. Markets for derivatives will exist to protect participants from price volatility, such as options, futures, and other instruments.

Implications for Transmission and Distribution System Operators. This will be the center of activity around the development and maintenance of the Smart Grid. Totally new technology will be deployed to run and control a digital power delivery network enabling more complex interaction, improving reliability and decreasing load.

Implications for Electricity Suppliers. Consumers will show preference for generation options that are both environmentally benign and protect energy diversity. Fuel diversity is key to a sustainable and secure energy future including advanced coal, nuclear, gas, and renewables. Concern will remain over the aging fleet of coal-fired capacity. Distributed generation will be critical, enabling competitive markets and evolving renewable energy. The U.S. will continue to perfect and refine the options for hydrogen technology. Over time, a true trading market could be created for all energy assets through monetization of demand-response, emissions and other practices.

Implications for the Environmental Community. Environmental issues will be resolved through market-based mechanisms and incentives that utilize the transformed electricity infrastructure. Environmental regulations will continue, but their nature will change as issues are resolved. New businesses will arise initially dealing with pollution control through market mechanisms, but ultimately incorporating industrial ecology as a tool for balancing ecosystem needs with emissions and waste.

EPRI's opinion of where we go from here. The ultimate goal is to establish a coherent set of actions and accountabilities that reflect mutual self-interest and equity across the broad stakeholder community. We should develop a unified industry leadership vision and commitment. We should establish an inclusive "rallying cry" for action through public policy leaders at the local, state and federal levels. We should expand the stakeholder outreach and education initiative. We should independently validate both the benefits of this transformation and the costs of maintaining the status quo.

At the fourth workshop, the Arizona Department of Environmental Quality made a presentation entitled "Basic Elements of a Cap-and-Trade Program." A Cap-and-Trade Program sets caps, or limits, on pollutants. Such a program allows participants to buy and sell allowances for certain pollutants.

The presentation included discussion of pollutants of concern, the sources of pollutants, and how much the sources contribute to the pollution problem. Emissions inventories must be accurate. The price of credits tend to track the marginal cost of control. Emission control strategies must be both technically feasible and economically feasible.

The presentation included the details of setting the caps and the administration of the program.

At the fifth workshop, representatives of the Arizona Power Authority made a presentation about Renewable Energy Credits, also known as "RECs." It included:

A Renewable Energy Credit represents one megawatt hour ("MWh") of energy generated from an energy source that is naturally regenerated, such as solar, hydro, wind, geothermal energy, methane gas from landfills, fuel cells, and other technologies. The REC market in the U.S. is only just beginning. Currently, there are no standardized tracking, verification, and accounting methods or systems. RECs can be sold either bundled or unbundled. So the electricity can be sold either with or separately from its "green" or "renewable" attributes.

Establishment of an independent REC trading market will have the effect of helping to expand the renewable energy technology industry. The renewable credit market has started to develop due to various state incentives for renewables, state-mandated purchases of renewables, air quality requirements, customer-driven "green electricity" purchases, and environmental disclosure requirements that show fuel mix and emissions.

The presentation discussed RECs in Texas, California, the New England Power Pool ("NEPOOL"), New York, and the PJM region (Pennsylvania, New Jersey, and Maryland).

There was a description of the Western Renewable Energy Generation Information System ("WREGIS") that is being developed in the West. It was initiated by the Western Governor's Association. Currently the major driver for WREGIS is California, which has a mandate to have a tracking system operational by January 1, 2005. Although California is taking the lead, representatives of all the western states are participating in the WREGIS development process.

Environmental Risks to be Considered

The group discussed the environmental risks that should be considered in the workshop process. There was agreement that the following environmental risks should be considered:

- Carbon dioxide (CO₂)
- Sulphur Dioxide (SO₂)
- Nitrous Oxides (NO_x)
- Ozone
- Mercury

- Particulate Matter (PM_{2.5})
- Visibility
- Water Use

Environmental Risks and Their Magnitude

After discussion, the workshop participants agreed that one of the tasks of the workshop participants should be to identify the potential costs of compliance with future environmental regulation such as more stringent emission standards or carbon dioxide emission reduction requirements. This will be a project for future workshops.

Approaches for Mitigating Environmental Risks

In the third workshop, a number of approaches for mitigating environmental risks were identified. They were:

- Good forecasting and anticipation of potential changes in environmental regulations or new regulations
- Going beyond existing regulations (sooner or better)
- Commitment to specific environmental targets as a way to limit exposure to risks
- In-depth identification of all aspects of risks, who the players are, and working cooperatively with them to solve the problems
- Use an adder approach to internalize the cost of mitigating risk
- Support alternatives to regulation that are cost-effective and manageable such as market-based approaches, including tradable credits
- Support lower water use technologies or the use of effluent instead of potable water
- Being involved in national or local groups that address environmental issues
- Investment in research and technology, such as pilot projects

Methods for Managing Environmental Risks

A number of methods for managing environmental risks were suggested. They include:

- a. Utility commitments regarding specific emissions from specific resources.
- b. Adders to market costs reflecting costs of complying with possible future environmental regulations associated with new resource options.
- c. Renewable portfolio standards and DSM programs.
- d. Tradable emission reduction credits.

Development of Environmental Criteria for Future Solicitations

The workshops have not yet developed environmental criteria for future solicitations. This task will be the subject of future workshops.

Proposed Future Environmental Risk Management Workshops

The participants in the latest workshops believe that the Commission should continue the workshop series. Future workshops will bring in outside expert speakers to provide presentations on a number of key issues. Work still needs to be done on the quantification of the environmental risks.

There also need to be additional workshops to develop a set of knowable and measurable criteria which can be used to weigh the environmental impact of offers received in future solicitations.

At least one additional workshop will be needed to formulate a draft environmental risk management policy.

Many of the participants in the Environmental Risk Management Workshop process are the same individuals who are participating in the DSM Workshop process and the newly commenced Environmental Portfolio Standard Workshop process. To the extent that the Commission chooses to pursue significant DSM and additional renewable energy programs (beyond the current Environmental Portfolio Standard program), it may be possible to fold some of the Environmental Risk Management activities into the DSM or Environmental Portfolio Standard workshops.

Recommendations

Staff believes that the Environmental Risk Management Workshop process has been successful so far in raising and discussing some of the important issues related to environmental risk management policy. However, more workshops need to be held in order to fully explore the subject.

Progress is being made in the DSM Workshop process and the Environmental Portfolio Standard Workshop process. Staff believes that the results of these two other processes will contribute to the completion of the work of the Environmental Risk Management Workshop process. Therefore, Staff recommends the continuation of its series of Environmental Risk Management workshops, with the intent of incorporating actions developed in the other two processes.

On the subject of hearings, Staff believes that it is too soon to determine if hearings will be needed. Once the workshops attempt to start quantification of risks and costs and benefits of various proposed approaches, it should become obvious if there is substantial agreement on the

facts and recommendations and whether there will be a need to have formal hearings. If hearings are deemed to be appropriate, there might be some logic in having joint hearings on the three major areas of interest: DSM, renewables, and environmental risk management.

Staff recommends filing a final report with recommendations after the workshops have concluded. Included in the report would be recommendations of whether or not hearings should be held. Staff anticipates that the final report would be filed by the end of calendar year 2004.

List of Participants

Participant	Organization
Stephen Ahearn	Residential Utility Consumers Office (RUCO)
Robert Annan	Arizona Clean Energy Industries Alliance
David Berry	Western Resource Advocates
Patrick Black	Fennemore Craig
Harvey Boyce	Arizona Power Authority
Jana Brandt	Salt River Project
Peggy Carpenter	City of Scottsdale
Tim Coley	Residential Utility Consumers Office (RUCO)
David Couture	Tucson Electric Power Company
Gary Crane	SouthWestern Power Group
Dennis Criswell	Arizona Electric Power Cooperative
Hercules Dellas	Arizona Corporation Commission (Commissioner Aide)
Ira Domskey	Arizona Department of Environmental Quality (ADEQ)
Kara Downey	Arizona Electric Power Cooperative
Ed Fox	Pinnacle West
Mark Gabriel	Electric Power Research Institute (EPRI)
Russ Garrett	Salt River Project
Commissioner Mike Gleason	Arizona Corporation Commission
Charles Gohman	Arizona Energy Office
Tom Hansen	Tucson Electric Power Company
Anita Hart	Southwest Gas
Tom Hines	Arizona Public Service Company
David Hutchens	Tucson Electric Power Company
Chris Janick	Salt River Project
Barbara Keene	Arizona Corporation Commission Staff
Marcia Kennedy	Arizona Power Authority
Barbara Klemstine	Arizona Public Service Company
A.K. Krainik	Arizona Public Service Company
Paul Li	Office of Bob Lynch
C.V. Mathai	Arizona Public Service Company
Cassius McChesney	Arizona Public Service Company
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Bill Meek	Arizona Utility Investors Association
Chuck Miessner	Arizona Public Service Company
Jay Moyes	Moyes Storey law Offices
Thomas Mumaw	Arizona Public Service Company
Bill Murphy	Murphy Consulting
Daniel Musgrove	Universal Entech
Michael Neary	Arizona Solar Energy Industries Association
Terry Orlick	Arizona Public Service Company
Amanda Ormond	Ormond Group
Greg Patterson	Arizona Competitive Power Alliance

Cindy Phillips	Salt River Project
Bill Rigsby	Residential Utility Consumers Office (RUCO)
Karilee Ramaley	Pinnacle West
Randy Sable	Southwest Gas
Jeff Schlegel	Southwest Energy Efficiency Project (SWEET)
Vivian Scott	Southwest Gas
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Scott Wakefield	Residential Utility Consumer Office (RUCO)
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