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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF IDAHO POWER COMPANY FOR AUTHORITY TO INCREASE ITS INTERIM AND BASE RATES AND CHARGES FOR ELECTRIC SERVICE.	)	CASE NO. IPC-E-03-13

IDAHO POWER COMPANY

DIRECT REBUTTAL TESTIMONY

OF

JOHN P. PRESCOTT

Q. Please state your name and business address.

A. My name is John P. Prescott and my business address is 1221 West Idaho Street, Boise, Idaho 83702.

Q. What is your position at Idaho Power Company?

A. I am the Vice President of Power Supply.

Q. What is your educational background?

A. I graduated from Idaho State University in Pocatello, Idaho in 1981 receiving a BS Degree in General Engineering. In 1987, I received an MS Degree in Electrical Engineering from the University of Idaho in Moscow Idaho. I have done postgraduate work towards a PhD in Mechanical Engineering and Energy Studies at the University of Wales in Cardiff, UK. I successfully completed the Advanced Management Program at the Harvard Business School in 2003. I am currently licensed as a Registered Professional Engineer in the states of Idaho, Wyoming, California, Nevada, Oregon, Washington, Montana and Utah.

Q. Please outline your professional experience.

A. I began my career at the Company in 1982 as a communications engineer. I advanced through several engineering and management positions in the areas of power system operations and substation management. I directed the Company's R&D program focusing on alternative energy systems from 1991 to 1994. In 1995 I became the President of Stellar Dynamics, a wholly owned subsidiary of the Company doing power control system engineering. I returned to the Company in 1999 when I was selected to be the Vice President of Generation. As my responsibilities expanded, I was named the Vice President of Power Supply in 2001.

Q. What are your duties as the Vice President of Power Supply?

A. In this role I am responsible for the safe, reliable and cost effective supply of electricity to the customers of the Company. This involves the operation and maintenance of 17 hydroelectric projects, the Danskin peaking plant and the Bennett Mountain peaking plant, which is currently under construction. I also manage the Company's interest in three coal fired generation plants in Wyoming, Nevada and Oregon. I direct the Company's efforts in resource planning, load forecasting, fuel management, water management, transmission adequacy, power market transactions, resource optimization and hydro plant relicensing and compliance.

Q. What topics will your testimony cover?

A. I will address the proposal that the Industrial Customers of Idaho Power make through the testimony of Dr. Reading that the Company should have canceled the Danskin Power Plant in 2001 and his recommendation that the Commission now remove the Danskin Power Plant from rate base. I will also provide additional information regarding Idaho Power's cloud seeding program and correct erroneous information the Commission Staff apparently relied on to support its recommendation that the Commission (1) exclude the Company's investment in Woodhead Park from rate base and (2) exclude investment the Company incurred in defense of its Federal Energy Regulatory Commission ("FERC") Hells Canyon license relating to the Biological Opinion.

<u>DANSKIN</u>

Q. Please generally describe the Danskin Power Plant.

A. The Danskin Power Plant consists of two identical 45 MW Siemens-Westinghouse W251B12A natural gas-fired combustion turbines and the associated switchyard. The 12-acre facility, constructed during the summer of 2001, is located northwest of Mountain Home, Idaho. In generally accepted industry parlance, the Danskin Plant is referred to as a peaking facility. As such, the Danskin plant is primarily used to meet extreme load conditions, which for Idaho Power Company usually occur during the later afternoon or evening hours in mid summer.

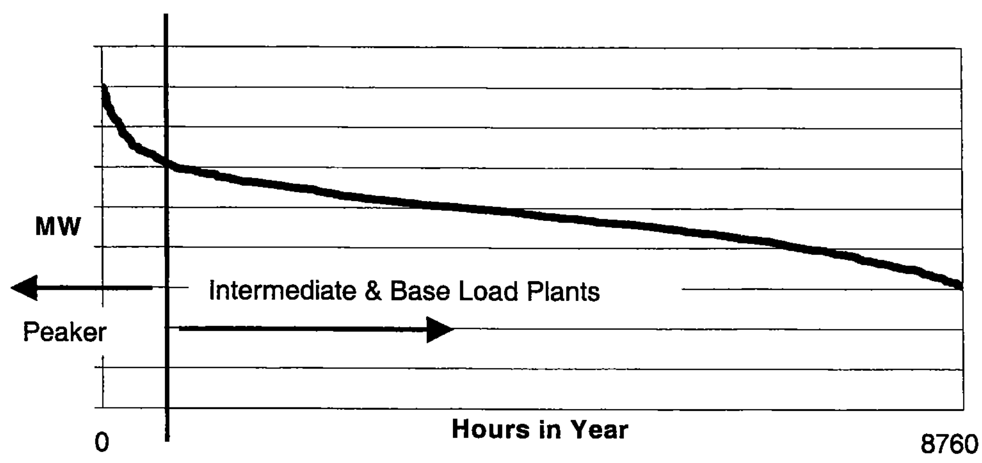
Idaho Power identified the near-term need for peaking facilities in its 2000 Integrated Resource Plan ("IRP"). In the 2000 IRP Idaho Power announced that the Company would issue a Request For Proposals for a peaking facility as a part of its 2000 IRP Near-Term Action Plan. In July of 2001 in Order No. 28773, in Case No. IPC-E-01-12, the Commission issued a Certificate of Public Convenience and Necessity to Idaho Power for the Danskin Power Plant.

Q. What is a peaking facility?

A. The generally accepted attributes of a peaking facility include relatively low capital (fixed) costs and relatively high dispatch (variable) costs. It is also generally assumed in the industry that a peaking facility will operate at a relatively low capacity factor.

Figure 1 depicts a typical load duration curve. A peaking facility operates in the extreme upper left hand portion of the curve. As indicated in Figure 1, a peaking facility is needed to meet demand for only a few hours in a year.

Figure 1. Typical Load Duration Curve



Q. What is meant by the term capacity factor?

A. For a power plant, the capacity factor is the ratio of the plant's actual generation to the generation that the plant could have produced if it had operated at its rated capacity for the number of hours in the period under consideration.

Q. Are there any guidelines or general rules of thumb as to capacity factors typically associated with a peaking plant?

A. Yes, the Electric Power Research Institute's ("EPRI") Technical Assessment Guide Volume 1: Electricity Supply - 1993 provides this type of information. The Technical Assessment Guide indicates that the capacity factor for a peaking plant ranges between 1% and 20%, with a nominal value of 10%. The Technical Assessment Guide explains that although the nominal value represents a lifetime levelized value, actual capacity factors for peaking plants may vary widely depending on a variety of conditions.

Q. What was Danskin's capacity factor in 2002 and 2003?

A. Based on a capacity of 90 MW, Danskin's capacity factor in 2002 was 5.7% and in 2003 its capacity factor was 5.5%.

Q. Why is Idaho Power building peaking

facilities?

A. Historically Idaho Power relied on its hydro plants to supply peaking needs. As peak loads grew the hydro system was no longer able to meet all of those needs.

By 2000 it became apparent that the population growth in the Idaho Power Company service territory and the fact that most new residences and commercial building were being equipped with air conditioning were leading to increased energy consumption during the hot days of summer. The increase in air conditioning load, combined with Southern Idaho's strong irrigation load led to a pronounced summer peak, and these conditions continue today. Additionally, the interstate transmission system that Idaho Power had historically used to import power in times of critical need was being used to capacity. It became apparent that Idaho Power would need to construct additional generation facilities within the Idaho Power control area and near its load if Idaho Power was going to continue to meet its growing summer load. Idaho Power Company reiterated the need for peaking resources in the 2002 Integrated Resource Plan, and issued a Request for Proposals for additional peaking resources in February 2003. Presently, TR^2 (formerly Mountain View Power) is constructing a 162 MW peaking facility for Idaho Power Company, also in Mountain Home, known as the Bennett

Mountain Power Plant. Preliminary analysis suggests that additional peaking resources may well be one component of the 2004 Integrated Resource Plan that will be filed in the summer of 2004.

Q. Has the Company kept the Commission and the public advised of its need to construct peaking generation facilities?

A. Yes. The Idaho Commission accepted both the 2000 and 2002 Integrated Resource Plans in which Idaho Power Company identified simple-cycle natural gas-fired combustion turbines as the most cost-effective generation to meet the summer peak. The Commission has also granted Idaho Power Certificates of Public Convenience and Necessity for both the Danskin Plant as well as the Bennett Mountain Plant that is currently under construction. Both the IRPs and the Certificate cases were public processes with significant opportunity for public comment.

Q. Please describe the summer peak conditions that the Danskin Power Plant is designed to address.

A. Idaho Power Company experienced its all-time system peak of 2963 MW during record heat in July 2002. In July 2003, the system peak was 2944. The summer peak may well exceed 3000 MW this summer. The summer peaks are very short in duration. In 2003 there were only seven hours where the system load was 2900 MW or greater. In 2002 there were only nine hours where the load was 2900 MW or greater.

The winter peaks are far different. During the 2002 - 2003 winter, the maximum system load never even reached 2000 MW. During this past winter, the maximum system peak was just under 2200 MW.

Q. What is the daily duration of the summer system peak?

A. The daily peaks are often quite short. For example, on the peak day last summer, there were three hours where the load exceeded 2900 MW and eight hours where the load was 2800 MW or greater. The minimum load on that day was just under 1900 MW.

Q. The peak load on that day was over 2900 MW and the minimum load was under 1900 MW. Are you saying that there is a difference of over 1000 MW between the daily peak and the daily minimum?

A. Yes. In fact, the difference was nearly 1100 MW. The peak of 2944 MW was 1.55 times the minimum load of 1894 MW. The Idaho Power load varies considerably over the course of a summer day.

Q. How does Idaho Power operate Danskin during the summer peak conditions?

A. It is important to understand that Danskin is Idaho Power's resource of last resort. Idaho Power only operates Danskin when it can be economically dispatched into the market, or when operation is deemed necessary to support system reliability, or when there are no other options to serve load. Typically, Idaho Power Company first meets load with its own low-cost resources including the hydro system and its partial ownership in three coal-fired plants. Second, Idaho Power will use the transmission system and purchase additional energy from the wholesale markets. Third, Idaho Power uses its load-control programs such as the pilot AC program and the pilot irrigation program. Fourth, Idaho Power uses its natural gas-fired peaking resources including Danskin and in 2005, Bennett Mountain to meet load. In this phase Idaho Power may also work with large industrial and other customers to see if cost-effective curtailments can be arranged. Finally, if all of this fails, Idaho Power may be required to pursue the load-curtailment program on file with the Commission to involuntarily shut off customers to stabilize the system. The Danskin Power Plant only operates when all of the other resources, generation, transmission, and in the future, expanded load-control programs, are operating at capacity.

In both the 2000 and 2002 IRP's, Idaho Power Company identified simple-cycle natural gas-fired combustion turbines as the most cost-effective generation to meet the summer peak. Even though the fuel cost can be high, the fact that the turbines are only operated during a few hours of the year and the fact that the capital costs are relatively low, and the fact that Idaho Power uses the facilities during the times of critical summer peak or winter peaks, for reliability or those times when it can be economically dispatched into the market, makes plants such as the Danskin Plant a very prudent choice.

Q. You said that Danskin was the "resource of last resort", what does that mean?

A. The resource of last resort means that Idaho Power Company operates Danskin when there is no transmission available or when market prices are so high that market purchases are unattractive. The Company's transmission constraints are real. Power may be available at the mid-Columbia market, but Idaho Power Company may have no way to get the power into our system. In the summer the transmission lines from the Northwest, Montana and Nevada are often operating at full capacity and there is no more space available for imports into the Idaho Power Control Area to serve peak loads. The Company may, at times, be able to import additional power from the eastern side of its system. However, from a planning perspective, the Company does not like to rely on purchases from the east for several reasons. The first concern is the actual availability of supply on the east. There is not much of a market on the eastern side of Idaho Power's system. Second, if power is available on the eastern side of the system, it is typically higher in price than northwest markets. The third reason that Idaho Power does not like to rely on purchasing from the eastern side of the system is because of PacifiCorp's two-thirds ownership in the Jim Bridger Plant. If a Jim Bridger unit trips, PacifiCorp will be looking to replace twice as much supply as Idaho Power will, potentially leading to shortages on the eastern side of the system.

Q. Could Idaho Power improve the transmission system?

A. Transmission improvements are possible, although transmission construction can be very costly and rights-of-way difficult and time consuming to obtain. In spite of these problems, Idaho Power is currently pursuing certain transmission upgrades that could provide some additional import capability in the next several years.

Q. Can Idaho Power Company meet the summer peak load with load-control programs?

A. The load control programs certainly look promising, but the programs are only part of the solution. During summer peak conditions, a properly sized residential AC unit may be on constantly during the peak hours. The residential AC program cycles residential air conditioners so that the compressors are on half the time and off half of the time - the program lowers the AC peak demand of the house by half. In ballpark figures, if Idaho Power Company adds 10,000 new residential per year, Idaho Power Company would have to enroll 20,000 residential customers in the AC load control program to offset the AC load from the 10,000 new customers. Load control programs are expected to become a valuable part of the portfolio, but Idaho Power will still need the Danskin Power Plant to reliably meet peak loads.

Q. Does Idaho Power Company operate the Danskin Plant to profit from off-system sales?

A. The Danskin Power Plant was built to supply native load. However, like any generating resource, Idaho Power has the option to run the Danskin Plant during times when the energy from the plant is surplus and can be sold at a profit. In those cases, the bulk of the profits would be returned to the Idaho Power customers through the annual Power Cost Adjustment.

Q. Dr. Reading's testimony focuses on the high costs of the Danskin Power Plant. How do you explain those costs in terms of the decision to build and operate Danskin?

A. First, no one should be surprised that the per MWh cost of a peaking plant is greater than a base load plant. Second, as the Commission noted in Order No. 28733 when it issued the Certificate of Public Convenience and Necessity for Danskin, the standard for evaluating the decision to proceed with Danskin must be viewed in the context of the facts known *at that time*. When the decision to build Danskin was made the market price of power was high. In February of 2001 Mid-Columbia forward prices for August through December 2001 were $350 - $415/MWh for heavy load hours, and $275 to $300/MWh for light load hours. Therefore, Danskin was considered valuable for its peaking attributes and for its "in the money" status which would have served to lower power supply costs to the retail customer. Given these forward prices, Danskin would have likely operated at full load for the remainder of 2001. In fact, given gas and power prices in the winter of 2001, Danskin's operation could have reduced net power supply costs to Idaho Power's customers by about $15 million dollars per month. Given these market conditions and Idaho Power's potential exposure, a down payment on the turbines was made in early February 2001 and the purchase was completed by mid-March 2001. The market subsequently changed but the project was continued based on the need for a true peaking resource.

Q. Dr. Reading is critical of the Company's estimates of the number of hours Danskin will operate. Is this criticism valid?

A. No. The decision to build Danskin was driven by the fact that the Company has an obligation to serve its customers even if inbound transmission constraints blocked access to the open market during peak times. Therefore the decision to build and operate Danskin was a low cost option to maintain continuity of service and reliability during those peak times when inbound transmission was unavailable. In other words the attributes of a peaker made Danskin a cost effective solution to the problem, i.e. a resource that has a relatively low capital cost, relatively high operating costs and a low capacity factor are desirous qualities. Dr Reading's comment ". . . asking ratepayers to assume the costs of a plant that will sit idle most of the time . . ." is misleading when considered in the context of the definition of a peaker. The operation of a fire truck is an analogous example to a peaker. It sits idle most of the time but has a specific purpose of being ready to respond to infrequent but critical situations.

Q. Dr. Reading testifies that the Company should have cancelled the Danskin Power Plant in the summer of 2001. Would it have been prudent for the Company to cease construction of the project after power prices dropped in the summer of 2001?

A. There are several reasons why it would not have been prudent or reasonable for Idaho Power to cease Danskin construction as Dr. Reading now recommends. First, Dr. Reading simply glosses over the fact that at the time wholesale prices dropped in the summer of 2001 there was still tremendous uncertainty in the Western electricity markets. While looking backward from today shows that wholesale prices began decreasing in June of 2001, the forward prices at that point were still abnormally high. And forward price predictions were all the information that was available in June of 2001. Additionally, there was considerable uncertainty as to how long the FERC-imposed price caps would remain in place and what affect their removal might have on market prices. Second, when one considers the extremely adverse water conditions that existed in the fall of 2001, canceling a generation resource in the face of a very uncertain wholesale market and transmission constraints would have been very risky. In short, without the benefit of Dr. Reading's 20/20 hindsight, I believe it would have been extremely imprudent to abandon Danskin in midstream as Dr. Reading urges.

Q. In addition to the operating risk of cancellation, would there have been financial ramifications of cancellation in mid-stream?

A. Of course. By the end of June 2001 Idaho Power had already incurred approximately $33.5 million in costs associated with the Danskin Power Plant. That amount represents approximately 65 percent of the total cost of the project. In addition, cancellation would have obligated the Company to pay substantial cancellation charges to various contractors. Considering the uncertainty in water conditions and the wholesale power markets at the time, and considering the fact that approximately two-thirds of total project costs had been incurred, plus the additional costs that would be incurred to terminate the project, Dr. Reading's suggestion that the Company should have cancelled the project and then requested recovery of the costs from customers is patently unreasonable.

Q. What would be the consequences of the Danskin Power Plant being excluded from ratebase and removed from service as suggested by Dr. Reading?

A. I am not qualified to address the ratemaking and legal ramifications of such a decision. Mr. Gale and Mr. Ripley will address those issues. I can say that as the officer in charge of resource adequacy for Idaho Power, that going into the summer of 2002 without Danskin, the Company would have significantly increased the risk of breaching its NERC reserve requirements and significantly increased the risk of service curtailment. In fact, during the 2003 peak summer season, even with Danskin running at full output, the Company was unable to maintain its desired reserve margins during some heavy load hours, meaning that a single system contingency would have required service curtailments.

Q. Are there other system benefits Danskin provides besides meeting peak load demand?

A. Yes. Having a generating resource providing voltage support close to the load center of the Treasure Valley helps to prevent a phenomenon known as voltage collapse. This happens during periods of peak customer demand when load is being served by generators remote to the load center since the reactive power necessary to maintain voltage is difficult to transmit over long transmission lines.

Danskin also provides emergency reliability for the system in the case of unplanned outages.

Q. On page 5 of Dr. Reading's testimony, at lines 19 and 20, Dr. Reading states that the variable costs of power produced from Danskin has varied between 60.2 cents per kWh in 2001 and 29.7 cents per kWh in 2002. This seems quite high. Please comment on this?

A. I believe Dr. Reading inadvertently included Danskin's fixed costs in those calculations. In general, Danskin's variable costs of production can be approximated by multiplying the delivered fuel cost in $/MMBtu by the plant heat rate of approximately 12 MMBtu/MWh. So, for $4/MMBtu gas, the variable cost of operating Danskin would be $48/MWh or 4.8 cents per kWh. In reality, we would add several $/MWh for variable O&M costs, but this approximation is close.

Q. Did Danskin operate effectively to carry customer loads during the peak summer months in 2002 and 2003?

A. Yes. During July of 2002 Danskin's units operated a total of 481 hours and during July of 2003 Danskin was operated a total of 567 hours.

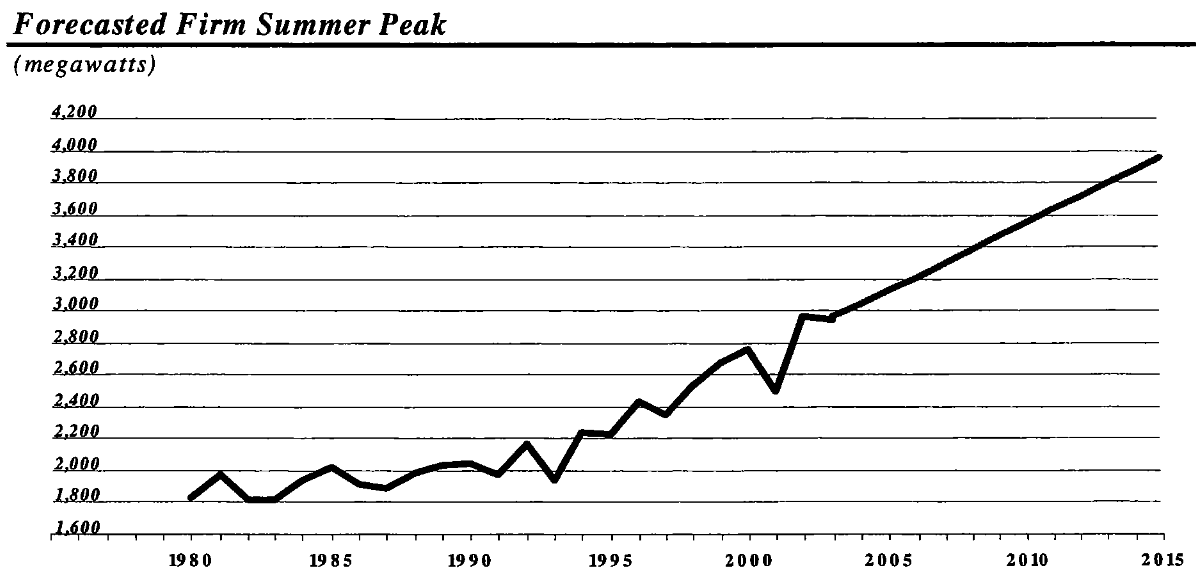
Q. Did Idaho Power depend on Danskin to serve its peak loads during the summers of 2002 and 2003?

A. Absolutely. In fact, if the Danskin plant had not been in-service and on-line during those peak months, Idaho Power might not have been able to meet its customers peak loads.

Q. What is your future expectation for the operation of Danskin?

A. Danskin will continue to dispatch to meet peak loads and for reliability during the summer of 2004 and beyond. While it is true that with the addition of the new Bennett Mountain CT Danskin may dispatch less, it will still dispatch during peak times when transmission constraints are encountered, especially as peak load grows over time. Summer peak load is growing on the order of 80 to 85 MW per year as illustrated in Figure 2 below.

Figure 2. Forecasted Firm Summer Peak



Preliminary 2004 Integrated Resource Plan results indicate that peak hour transmission deficits from the Pacific Northwest continue to grow. Even with Danskin and Bennett Mountain plants in operation, the projected peak hour transmission deficits from the Pacific Northwest reach 510 MW in 2010, and continue to grow in subsequent years. Given the projected peak hour transmission deficits, it is anticipated that the 2004 IRP will show a need for even more peaking resources located inside of the Company's control area near the load.

<u>WOODHEAD PARK</u>

Q. Staff Witness Leckie recommends that the Commission defer the Company's $7,525,237 investment in improvements made to Woodhead Park and include that amount in Hells Canyon Complex relicensing costs for recovery in the future. Recognizing that Idaho Power witness Gale will address the ratemaking aspects of Mr. Leckie's recommendation, can you briefly explain why Idaho Power invested in a substantial renovation of Woodhead Park?

A. Mr. Leckie correctly notes that as a condition of the Company's existing license, the FERC requires that Idaho Power optimize and provide adequate recreational opportunities for the public. Thus, Idaho Power must adapt to changing needs for recreational and other facilities on an ongoing basis throughout the license period.

Crappie angling and harvest on Brownlee Reservoir peaked in the late 1980's resulting in much more regional attention (via newspaper articles, word-of-mouth, etc.) and more demand on the Company's recreational facilities in Hells Canyon. In 1989, the Idaho Department of Fish and Game reported that Brownlee Reservoir was the most popular fishing pond in the state. It was estimated to have had 851,749 hours of angling effort, as compared to 400,000 hours at the next most popular, Cascade Reservoir. Fishing and associated camping was the most popular recreational activity in the Hells Canyon Complex (HCC).

Woodhead Park is Idaho Power's only park on Brownlee

Reservoir. It was the least developed of all Idaho Power camping facilities in the HCC. Woodhead Park was built in the 1950's and not designed for large RVs, campers, boats and trailers that were in use by the 1980's. By 1990 the amount, type and needs of users had far surpassed the facility's physical and functional capabilities. Because of this situation, the park was very congested, especially on weekends and holidays. The Company received expressions of concern from the public and special user groups (bass clubs, etc).

Immediate modern upgrades were needed. In order to meet public expectations, upgraded facility requirements included: a dependable and more consistent potable water supply; a wider and longer boat ramp with docking system and adequate parking for trailers and vehicles; restrooms to replace the existing pit toilets (all other parks had restrooms with showers); a fish cleaning station instead of using garbage cans; and upgraded electrical hookups.

Also, new federal regulations, i.e., the Americans With Disabilities Act required changes to accommodate the physically handicapped. Original Woodhead Park facilities were not compliant.

Woodhead Park reconstruction was completed in 1996. All features and facilities are utilized by the public.

Q. Are the improvements at Woodhead Park extensively used by the public?

A. Yes. In 2001, usage statistics fee use envelopes indicate 28,042 people camped at Woodhead Park. This figure does not include day-use, which is mostly associated with the boat ramp and fish cleaning facilities.

Q. Mr. Leckie argues that the investment in Woodhead Park improvements should be deferred because it is tied to relicensing of Hells Canyon Complex. Did upgrading Woodhead Park help reduce the potential demands and costs associated with relicensing?

A. While the primary motivation for the improvements was compliance with the existing FERC license, in addition to meeting usage demands at the time, there is no question that a significant benefit of rebuilding the facility prior to relicensing was to demonstrate responsiveness to public needs and moderate requests for additional facilities at Woodhead Park during the relicensing process. Idaho Power believes the Memorandum of Understanding with Idaho Department of Parks and Recreation ("IDPR") achieved this objective, as IDPR did not request additional facilities other than what was mutually agreed upon and proposed in the Final License Application for the new HCC license.

Q. Mr. Leckie notes that the rate-based costs of the Woodhead Park project are greater than originally estimated in the Revised Exhibit R filed with the FERC in November of 1990. Explain why the actual costs to renovate Woodhead Park are greater than the costs estimated in the Company's November 1990 FERC filing.

A. The anticipated costs noted in the revised Exhibit R, $4 to $5 million, were based on preliminary concept designs and estimated construction costs. The pre-bid estimate, based on final design, was $6 million. Bidding for the work was very competitive, with minimal difference between the three lowest bidders. The post-bid estimate of $6.8 million included Idaho Power overheads, interest during construction and adjustment for a pre-bid estimate error in quantity of paving. Because of low streamflow conditions in 1992, Idaho Power negotiated a contract modification and deferred for a year most of the planned 1992 and 1993 construction activities to minimize drought-year costs. The deferral contributed to final costs exceeding earlier estimates.

Q. Why is the Woodhead Park improvement investment being depreciated over a period longer than the existing license?

A. Though existing license obligations, as noted previously, caused Idaho Power to upgrade Woodhead Park, the improvements have a useful life extending beyond the license period. Idaho Power routinely makes prudent reinvestments in its facilities based on the "going concern" assumption. It is assumed that Idaho Power will continue operating into the future and new licenses will be issued to support that operation. Consequently, capital investments depreciate over their useful life, regardless of the license period in which they were made. Capitalized costs incurred in obtaining a new license are the exception and their depreciation period matches the license period.

Q. Does the Staff recommendation to exclude Woodhead Park investment comply with standard regulatory accounting practices?

A. I know that the term "used and useful" has a specific meaning in regulatory practice. Speaking as an engineer, there is no question that the Woodhead Park improvements are complete, used and useful. In keeping with the regulatory compact, it seems to me that prudent investments that are currently used and useful should be included in rate base. Excluding the investment from rate base until HCC relicensing costs are addressed ignores the fact that the improvements were done to meet current license requirements, meet current public needs, and are fully used and useful now.

Q. Mr. Leckie recommends that the Company investigate increasing user fees at Woodhead Park. Why not raise the park fees to cover annual operation and maintenance expenditures?

A. The FERC allows licensees to charge reasonable fees to help defray the cost of operation and maintenance of park facilities. Idaho Power sets fees based on rates at comparable facilities and the public's willingness to pay. The Company reassesses its user fee structure periodically and will increase fees consistent with the above-described criteria.

Q. Are there any other concerns you have with Staff's recommendation on Woodhead Park investment?

A. I believe that at a time when we are working hard to build needed public support for relicensing the Hells Canyon Complex, it is counterproductive to discourage investment in visible, desirable and appropriate improvements in recreation facilities in Hells Canyon.

BIOLOGICAL OPINION

Q. Staff Witness Leckie recommends that the Commission remove $654,740 from the Company's rate base attributable to capitalized expenses the Company incurred in defending against a Sierra Club lawsuit relating to a National Marine Fisheries "Biological Opinion." Is Mr. Leckie's characterization of the facts surrounding the biological opinion issue correct?

A. It is not entirely correct; however, I can understand how Mr. Leckie could misinterpret the facts surrounding the expenditure of costs for this matter because the facts are complex and his review was apparently limited to a brief summary of the facts provided by the Company in response to a Staff audit request. Nevertheless, to fully understand this matter, some additional explanation is needed.

In the early 1990's the National Marine Fisheries Service ("NMFS", now referred to as "NOAA Fisheries" or "NOAA") listed several stocks of anadromous fish that inhabit the lower Snake and Columbia Rivers under the Endangered Species Act ("ESA"). The Snake River sockeye listed as endangered in 1991 and spring/summer and fall chinook as threatened in 1992. Since those ESA listings, the Pacific Northwest has been engaged in a conflict over the sustainable use of the natural resources that influence the listed species, including the water resources of the State of Idaho. Idaho Power finds itself in the middle of this controversy largely because it owns and operates 14 hydroelectric plants on the Snake River that are situated geographically between the upper Snake River Bureau of Reclamation (BoR) storage reservoirs and the four lower Snake River Federal dams that many consider to have brought the region's anadromous fish resources to the brink of extinction. The largest of the Company's facilities, and the one closest to the habitat of the listed species, is the

Hells Canyon Complex.

In March 1997, the Sierra Club Legal Defense Fund, on behalf of several environmental groups, sent a "notice of intent to sue" for violation of the ESA to FERC and NMFS threatening to file suit pursuant to § 11(g) of the ESA if FERC did not initiate consultation with NMFS regarding the effect of ongoing operations of the HCC on ESA listed anadromous fish. Thus began a long and complex legal and technical battle over the alleged effect of operations at the HCC on the listed species.

Q. Why was this action of such great concern to Idaho Power?

A. The environmental groups were attempting through this action to force the FERC to reopen the Company's existing license for the HCC, and impose operational changes to address alleged effects on the listed species. Many of the changes supported by the environmental groups would significantly reduce operational flexibility and potentially impose millions of dollars in additional operational costs and were not supported by scientific research. These costs would have begun in the year imposed and continue each year throughout the remaining term of the existing Hells Canyon Complex license and until a new license is issued. The operational changes and associated costs, if imposed, would likely also continue into and through the term of the new license.

Q. Why did Idaho Power Company capitalize the costs associated with defending the Hells Canyon Complex license and its operational flexibility in this Biological Opinion matter?

A. As noted previously, the intent of the environmental groups' lawsuit was to force FERC to reopen the current Hells Canyon Complex license and incorporate restrictive modifications. Idaho Power's successful defense of the integrity of the current license prevented negative impacts to revenues and expenses in the test year as well as years into the future. The multi-year benefit was one factor for capitalizing the costs.

The Company's interpretation of CFR 18 Electric Plant Instruction 3.8 and CFR 18 Electric Plant Instruction 3.15 support the selected accounting treatment. The Company also considered the accounting treatment the Commission approved for the Nez Perce settlement case, which is factually similar and cites the same CFR provisions, as providing guidance and precedent for the capitalization decision in this case.

Q. What is the depreciation schedule for the investment?

A. Costs to defend the operating integrity of the license benefit the remaining life of the existing Hells

Canyon Complex license. The benefit will likely extend into the period of annual licenses issued until the relicensing process is complete and a new multi-year license is issued. It is difficult to estimate how long the relicensing process will take, but a conservative estimate is three years beyond expiration of the current license. Therefore, a depreciation period of 52 months (March 2004 through June 2008) is being used for the investment. The start of the depreciation was delayed due to a misunderstanding regarding the Biological Opinion's costs and their link to HCC relicensing. Based on this schedule, monthly depreciation expense is $12,591; annual depreciation is $151,092.

Q. Do you have any final thoughts on this issue?

Q. It seems clear to me that this investment will have a long-term positive effect on the Hells Canyon Project and should be included in the Company's rate base.

CLOUD SEEDING

Q. Staff Witness Hessing testified that additional information is needed for the Staff and Commission to adequately assess the reasonableness of including expenses associated with the Company's ongoing cloud seeding program in test year expenses. Could you please address the Company's ongoing cloud seeding program?

A. Yes, I can. In his testimony Mr. Hessing poses four questions relating to cloud seeding. In my response I will initially respond to Mr. Hessing's characterization that cloud seeding is experimental and somewhat controversial, and then I will answer his four questions in the order posed.

Q. On page 24 of his testimony Mr. Hessing states that "Given the experimental and somewhat controversial nature of cloud seeding programs . . ." Is cloud seeding experimental?

A. There is no question that cloud seeding is somewhat controversial and experimentation is ongoing. However, cloud seeding has gone beyond the experimental stage. Experimentation continues in the field of weather modification, but the field is no more "experimental" than say, an experimental aircraft. It works, but there is room for improvement. While admittedly there is controversy, the World Meteorological Organization, the American Meteorological Society, the Weather Modification Association, and the American Society of Civil Engineers all acknowledge or have published statements indicating a properly conducted cloud seeding project can produce significant results.

Idaho Power's interest in cloud seeding is to augment snow pack, and ultimately hydroelectric generation. Due to the interest in snow, the project focuses on wintertime cloud seeding. Idaho Power recognizes that to be effective, a cloud seeding project must be properly conducted. Idaho Power has and is making significant efforts to ensure that the project is properly conducted to assure the anticipated benefits.

Q. Mr. Hessing's first question is: What activities constituted the cloud seeding program in past years, including the test year, and what are the Company's cloud seeding plans for upcoming years? Please answer this question.

A. Idaho Power began investigating whether or not cloud seeding might be a beneficial tool in the early 1990's. By 1995, there was enough positive evidence to convince the Company to make a focused investigation as to the "meteorological receptiveness" of the Payette River Basin to cloud seeding efforts. In conjunction with the Desert Research Institute ("DRI"), an adjunct of the University of Nevada, the weather and climatology of the area were investigated. That inquiry provided the impetus for what can be considered the "seeding program in past years."

A contract was awarded to Atmospherics Incorporated (AI, Fresno, CA) for an operational cloud seeding effort on the Payette River Basin during the winter of 1996-97. The winter got off to an extremely warm and wet start. Therefore, the effort was suspended in December 1996.

Following the suspension of operations in 1996, the Company continued to evaluate cloud seeding. The evaluation addressed two general areas of interest. First, the Company kept abreast of existing and new cloud seeding projects, research and developments. Second, the evaluation focused on assessing the rewards and/or risks to shareowners that result from funding a project with the purpose of reducing power supply costs with no clear regulatory mechanism to equitably share the project costs and benefits between shareowners and customers. Following several years of evaluation and discussions with Commission Staff regarding project cost, rewards and risks, the Company committed to an in-house project in 2002.

In 2002 the Company hired a full-time meteorologist, experienced in wintertime cloud seeding. Working with a consultant who had been active in researching and designing the project, an operational program was again initiated in late January of 2003. Seeding began on February 1 and continued, when opportunities arose, until April 15, 2003. During that time, an aircraft specially modified for cloud seeding and contracted from Weather Modification, Inc. (WMI) of Fargo, ND flew for 22.3 hours and seeded for 15.4 hours, releasing 23,207 grams of seeding material (silver iodide, AgI). A network of six ground-based generators operated for 514.5 hours and released an additional 10,288 grams of AgI.

During the operational period, fifty-five weather balloons were released within the watershed for operational and research uses under a contract with Technical and Business Systems, Inc. of Santa Rosa, CA.

Given favorable meteorological conditions, the plan, calls for an in-depth evaluation phase over the current and the next winter seasons. A specially modified aircraft, again acquired through a contract with WMI, releases both a tagged seeding agent (mixed AgI and cesium iodide (CsI) and an inert tracer that has indium (In) as the key ingredient. A second aircraft, available for approximately two weeks and modified for cloud physics research, will take samples of the aerosol and particle size spectra, measure in-cloud moisture content, and several other parameters to refine seeding procedures and the formulae used for the seeding material. Weather balloons will again be released from within the watershed. Unlike last season, this task has been assumed by the project personnel, rather than undertaken as a contracted service. The ground-based units, again consisting of six locations, each have two generators, one releasing AgI, the second, the In tracer. This combination will allow for sophisticated analyses of the trace chemistry and help identify the relative impact and merit of the two delivery methods (ground and aircraft). Detailed density analysis of the snow samples will provide an indication of project yield and effectiveness. Positive results from this investigation, being conducted by DRI, are expected to support an on-going project. Negative results for the aircraft or ground based component that cannot be adequately explained will likely lead to cancellation of that piece of the program.

The DRI has initiated work this winter to evaluate the project using trace chemistry. Two sampling expeditions have been completed so far and samples from the first expedition have been analyzed. Preliminary results from the first expedition show that the snow pack at three sites in the basin contain layers containing significant amounts of silver. These layers are also enriched in silver relative to the rest of the snow pack suggesting some contribution from silver iodide. Estimates of the deposition dates of the enriched layers are consistent with the records of silver iodide releases from the ground and aircraft silver iodide generators. The first expedition took place prior to releases of cesium and indium and found an extremely low background for these elements (at the parts per quadrillion to parts per trillion level), which means that the determination of the tracers will be unambiguous. Additional information regarding the preliminary results can be found in Exhibit 69 to my testimony.

Q. Mr. Hessing's second question is: What criteria will the Company use to determine the level of cloud seeding activity and expenditures necessary in any given year? Please answer this question.

A. The level of seeding activity will vary with the weather of the given season. During dry years, fewer opportunities will arise (fewer storm systems), but they will need to be worked for whatever benefit can be gained. Expenditures might be somewhat lower during these years, but the reduction is not expected to be significant because of the extra effort involved in seeding any and all storm systems. During wet years, initial activity will be high because of more frequent opportunities, but at the same time, it becomes more likely that the project's suspension criteria will be met or exceeded, leading to a secession of activity. Hence, there would be higher costs early in the season and a significant reduction later. During a normal winter, operations would be expected to be at or near the budgeted level. In summary, costs should remain relatively steady once the project is through the startup and evaluation phases.

Q. Mr. Hessing's third question is: How does the Company evaluate whether cloud seeding works and that the benefits exceed the costs? Please answer this question.

A. The evaluation phase of the Project calls for a sophisticated trace chemistry and snow density analysis, as outlined above. These analyses will allow Idaho Power to evaluate the relative effectiveness of the two delivery systems and differentiate between snow that would have fallen naturally and that which resulted due to seeding. The differences will allow a quantitative evaluation of how much snow was produced during each seeding event and over the course of the season. A copy of preliminary results from the trace chemistry analysis performed by the Desert Research Institute is attached as Exhibit 69.

Under the original project plan, no evaluation of effectiveness was intended during the first, start-up year. However, pending the results of the trace chemistry analysis, a preliminary, target/control statistical analysis was conducted by Idaho Power personnel not involved in seeding decisions. (This analysis was indirectly confirmed by a similar analysis of seeding activity on the adjacent Boise River watershed by North American Weather Consultants). The results indicate that the seeding activity during the winter of 2002-03 resulted in a 13-19 percent increase in precipitation in the Payette River Basin during the time frame of active seeding. The most likely yield is 15-16 percent. That would equate to approximately 110,000 acre-feet of water that would subsequently produce 55,000 MWh of electricity at Idaho Power's Hells Canyon Complex. Using the average market price of electricity for

2003, the value of that power would be on the order of $1.7 million, giving a benefit/cost ratio of ~1.5:1 for the startup phase and a relatively brief period of seeding operations. Once the costs associated with the evaluation phase (note that costs associated with assessment were not incurred during 2003 test year) are removed from the budget, assuming a conservative ten percent increase in precipitation yields a benefit/cost ratio of ~4:1 given hydrologic conditions of 80 to 120 percent of normal precipitation.

Q. Mr. Hessing's last question is: What would be the effect on the Company's cloud seeding program if the Commission denied recovery of the costs requested in this case? Please answer this question.

A. Idaho Power believes that a properly operated cloud seeding program will be a cost effective means of increasing generation at existing hydroelectric facilities. Conservative projections for a fully implemented project indicate a benefit cost of ~4:1, and that the cloud seeding project will provide on average 80,000 MWh of generation per year. Initial indications as discussed above are that the project provided a positive benefit the first year, even with a shortened operating period and expenses associated with startup and implementation. And, as set out in Exhibit 69, indications are that the project is having a positive benefit on snow pack the second year as well. Efforts are currently underway to assess the effectiveness of the project using trace chemistry and airborne cloud physics analysis. Results from the assessment are expected to demonstrate the effectiveness of the project, and provide information useful to further refine the project configuration and operations. However, even with a very attractive benefit cost ratio, without the ability to recover costs on an ongoing basis, it is likely that Idaho Power would not continue to pursue cloud seeding as a water management tool and as a means of offsetting the need to acquire additional generation.

Q. Does this conclude your direct rebuttal testimony?

A. Yes.

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-03-13

IDAHO POWER COMPANY

EXHIBIT NO. 69

J. PRESCOTT

2003-2004 Cloud Seeding Program

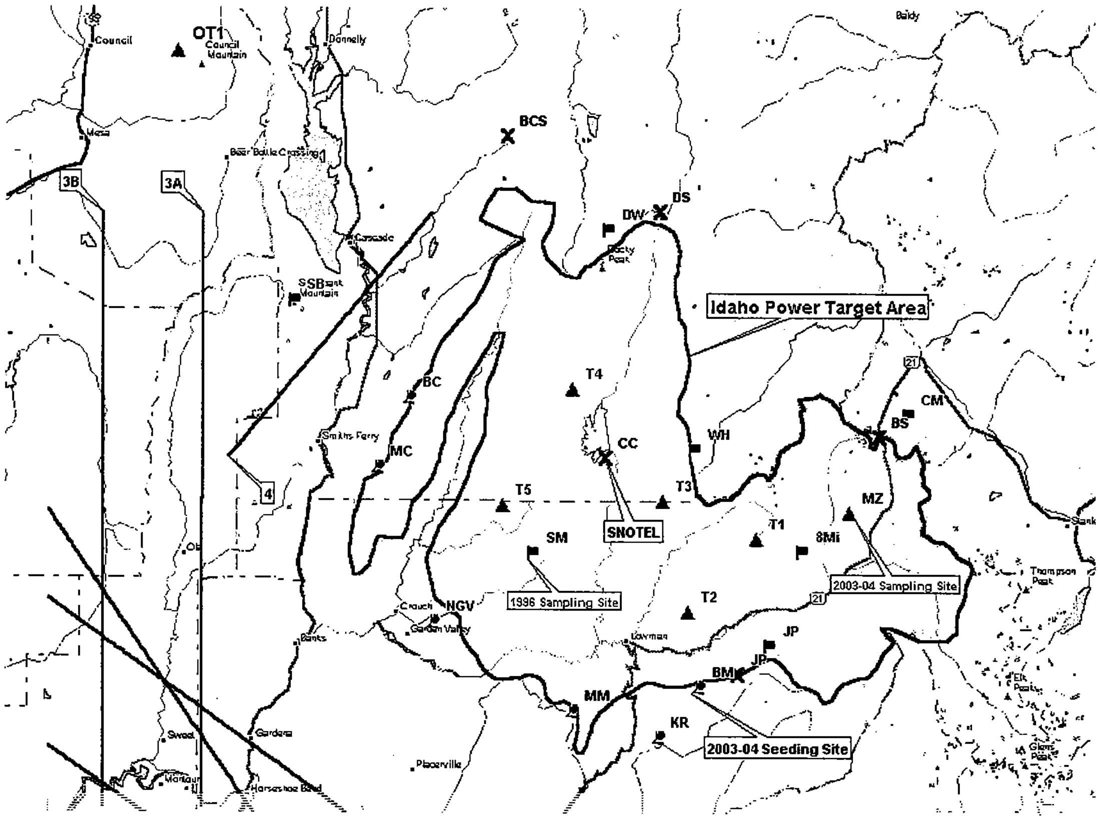


Figure 1 Map of snow sample site location, ground generators and SNOTEL sites.
The map shows the target area bounded by a red line, triangles = sampling sites, flags = SNOTEL sites and blue pins = ground generators.

<u>Sample preparation and chemical analysis</u>

Silver, indium and cesium in the target area snow pack are present at the parts per trillion level (10^{-12} g g^{-1}) requiring both ultra-trace clean techniques and extremely sensitive analytical methods. The Desert Research Institute Ultra-trace Chemistry Laboratory routinely analyzes snow and ice samples from Antarctica and Greenland (the purest snow in the world) and is one of several laboratories in the world capable of making ultra-trace elemental analyses in snow. The Ultra-trace Laboratory consists of a class 100 clean room, two adjacent wet chemistry laboratories and a sample preparation freezer (-16 ° C). The clean room (Fig. 1) houses a high-resolution inductively coupled plasma mass spectrometer (HR-ICP-MS), an inductively coupled plasma optical emission spectrometer (ICP-OES), and an ultra pure water system (18.2 MΩ).

Silver, indium, cesium and aluminum are being determined in the snow samples by high resolution inductively coupled plasma mass spectrometry. The main advantageous of this method are that it requires minimal sample preparation and has detection limits in the

Preliminary Results of the IPCo 2003-2004 Cloud Seeding Program Trace Chemistry Evaluation

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Arlen Huggins[2]
Joseph McConnell[1]

March 2004

R. Edwards 03/15/2004

P. Ross Edwards Date

Preliminary Report for the IPCo Operational Seeding Program Trace Chemistry Evaluation

Executive Summary

As part of the Idaho Power Company's Cloud seeding assessment for 2003-2004 we have been conducting a trace chemical evaluation of the snow pack in the Upper Payette River Basin. The evaluation is based on the determination of silver, indium, cesium and aluminum in the snow pack at seven sites including a control site outside the basin. Indium and cesium are being released along with silver iodide in order to discern between aircraft and ground based releases of silver iodide and to determine whether the silver present in the snow pack is due to ice nucleation or other processes. Aluminum comprises some 8% of the earth's crust and is being determined in order to calculate whether the silver found in the snow is enriched relative to background inputs from soil and dust.

Two sampling expeditions have been completed so far and samples from the first expedition have been analyzed. Preliminary results from the first expedition show that the snow pack at three sites in the basin contain layers containing significant amounts of silver. These layers are also enriched in silver relative to the rest of the snow pack suggesting some contribution from silver iodide. Estimates of the deposition dates of the enriched layers are consistent with the records of silver iodide releases from the ground and aircraft silver iodide generators. The first expedition took place prior to releases of cesium and indium and found an extremely low background for these elements (at the parts per quadrillion to parts per trillion level), which means that the determination of the tracers will be unambiguous.

Samples from the second expedition will soon be analyzed. Both indium and cesium tracers were being released during the time that these samples were deposited and their analysis will give a clearer indication of the silver sources and impact on the snow pack water content.

Preliminary Report for the IPCo Operational Seeding Program Trace Chemistry Evaluation

Overview of the trace chemistry evaluation

The Trace Chemistry Evaluation (TCE) component of the seeding program aims to investigate the presence of ice nucleating and non-ice nucleating tracer elements in the target area's snow pack. Targeting efficiency, seed source (ground vs aircraft) and the transfer of the seeding species to the snow pack by ice nucleation and scavenging are being assessed from the presence of silver (ice nucleating element), an indium tracer (non-nucleating element) and a cesium tracer (aircraft). Indium has been used in several wintertime cloud seeding research and operational projects to evaluate seeding effectiveness. Examples are the Pacific Gas and Electric Lake Almanor Project (Warburton et al., 1995a; Chai et al., 1993) and the NOAA-Nevada Atmospheric Modification Program (Warburton et al., 1996a; Warburton et al., 1996b). As indium has little impact on ice nucleation (but is present as insoluble particles in the same size range as silver iodide) the atmospheric transfer of indium to the snow pack is solely by processes collectively known as scavenging. Scavenging has no impact on the enhancement of precipitation, but may also transfer some silver to the snow pack and thus must be evaluated in order to determine the amount of silver incorporated into the snow by ice nucleation and hence the seeding effectiveness.

Cesium has been used in previous TCE's to distinguish between aircraft and ground based silver iodide releases. The Southern California Edison (SCE) cloud seeding project in the San Joaquin Basin of the southern Sierra Nevada was one of the first to evaluate an operational seeding project using both cesium and indium tracers (McGurty, 1999). In addition to silver iodide releases from the ground and air, cesium was used in ground generators, while indium was dispensed from aircraft generators. Trace chemical evaluation of the area's snow pack was used to determine the targeting effectiveness of the two seeding methods. The SCE program also made use of a detectable difference in the snow densities of seeded samples (greater density) and unseeded samples, to estimate the amount of water that was added to the snow pack by seeding operations.

Natural sources of silver, indium and cesium also exist and need to be investigated. For example all of the tracer elements are also present in soil and dust at very low levels, which may be incorporated into the snow. In order to evaluate natural inputs, aluminum and other soil and dust tracers are being determined and used to estimate variations in silver, indium and cesium enrichments. Equation 1. is commonly used to calculate an elemental enrichment factor, which is proportional to the ratio of the element of interest to aluminum in the snow divided by the average ratio of the element to aluminum in the Earth's crust. Based on this equation an EF of one would equal no enrichment relative to the Earth's crust, however significant regional variations do exist (for example silver ore is highly enriched) and silver EF's on the order of 100 – 1000 are not uncommon. Therefore the TCE is investigating variations in EF's and not the magnitude.

Equation 1. Enrichment factor

$$EF_{Element} = \frac{(Element\,/\,crustal.tracer)_{snow}}{(Element\,/\,crustal.tracer)_{Earths..Crust}}$$

The experimental design of the IPCo TCE has 6 components:

1. Ground and aircraft releases of silver iodide and additional tracers
2. Snow sampling expeditions to established sites within the target area and a control site out side of the target are.
3. The ultra-trace analysis of snow samples for silver, cesium, indium and aluminum and estimation of enrichment in respect to the average composition of the Earth's crust.
4. Estimation of targeting and targeting effectiveness based on snow silver, indium, and cesium concentrations and enrichments.
5. The investigation of snow pack density variations in relation to silver concentrations, enrichment and silver / indium ratios.
6. The construction of maps of targeting, targeting effectiveness and enhancement of snow pack density.

Sample Site Selection and Technical Approach

Site location and field expeditions

Seven snow pack sampling sites, including one control site, were selected based on target area coverage, altitude (> 6000 ft), proximity to the SNOTEL stations (Jackson Peak, Banner Summit, Deadwood Summit and Big Creek Summit) and the availability of helicopter landing sites. The sites, MZ, T1, T2, T3, T4, T5 and control site OT1 are shown in Figure 1. The SNOTEL data available for these sites may be used to determine specific storm periods from the snow profiles. Two snow poles with snow boards were placed approximately 20 ft apart at each site in November 2003. The snow sampling plan calls for four repeat sampling expeditions during the seeding season with the goal of collecting two snow chemistry profiles at each site. Sample collection procedures are similar to those used in the 1996 IPC program (Warbuton, et al., 1985) and include procedures to prevent contamination of samples by personnel and helicopters. Additional physical measurements (profiles of the snow pack density and stratigraphy) of the snow pack are conducted in snow pits. The sampling program also includes a quality control program that mandates the use of field and laboratory blanks and recovery standards. All snow samples are kept frozen until analysis at the Desert Research Ultra-trace Chemistry Laboratory.

Desert Research Institute

Trace Chemistry Evaluation of the IPCo 2003-2004 Cloud Seeding Program

Preliminary Results from the January 2004 Sampling Expedition

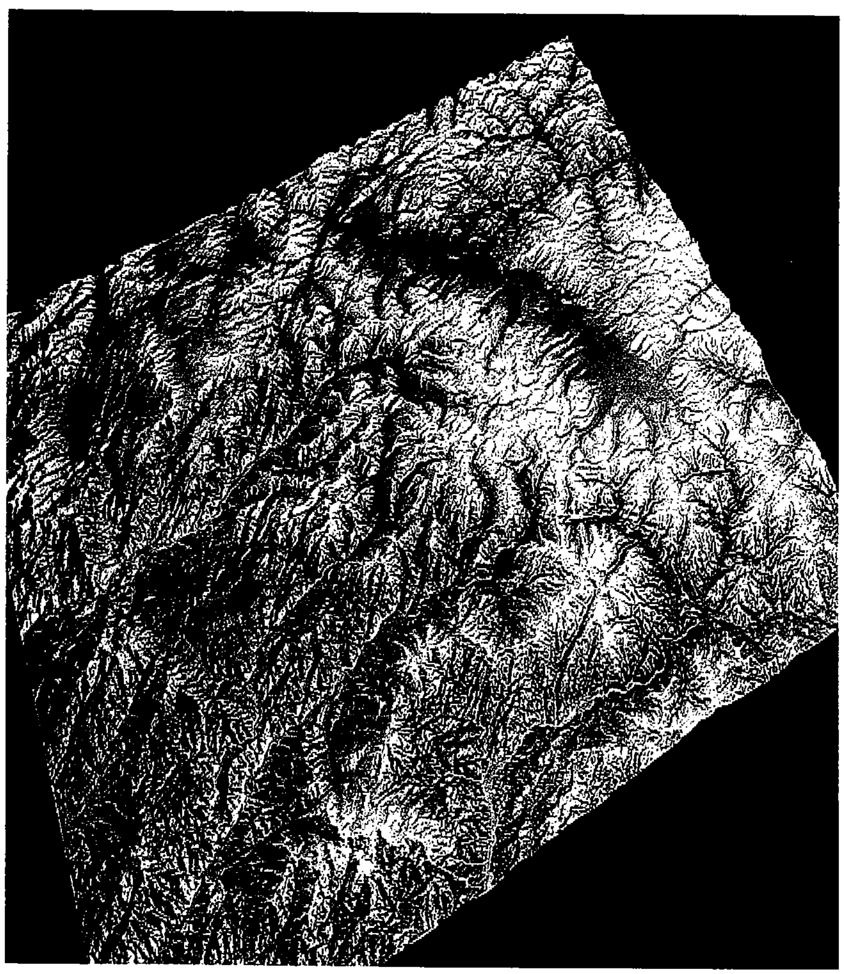

Exhibit No. 69
Case No. IPC-E-03-13
J. Prescott, IPCo
Page 1 of 10

parts per quadrillion range (10^{-15} g g^{-1}) for many elements. Sample preparation consists of adding a known amount of an internal standard (yttrium) to the sample melt water.

Preliminary Results

To date two sampling expeditions have been completed. The first expedition was conducted in January 2004, before the deployment of the indium and cesium tracers. The aim of this expedition was to make a preliminary analysis of silver at the sites and to establish background levels of cesium and indium. Some problems were encountered due to poor weather conditions and a high dust loading in snow at the control site OT1. Preliminary results for silver are shown in Figures 2. and 3.

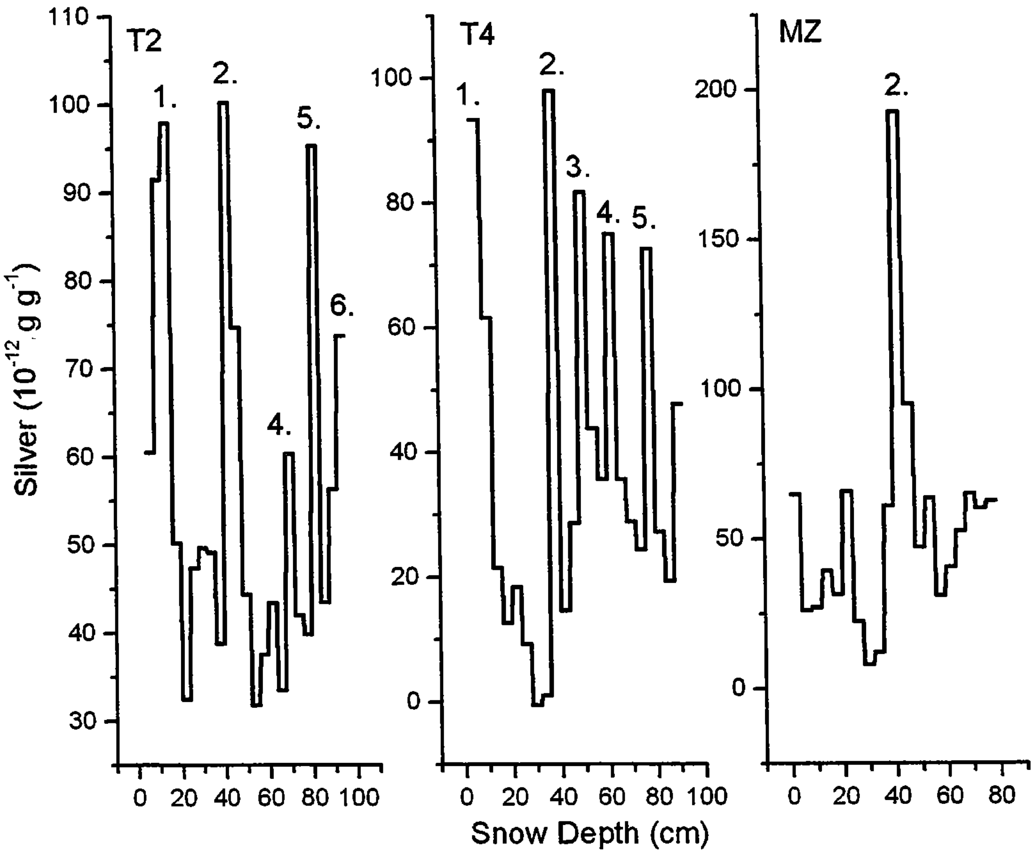

Figure 2 Silver concentrations for Sites T2, T4 and MZ as a function of snow depth

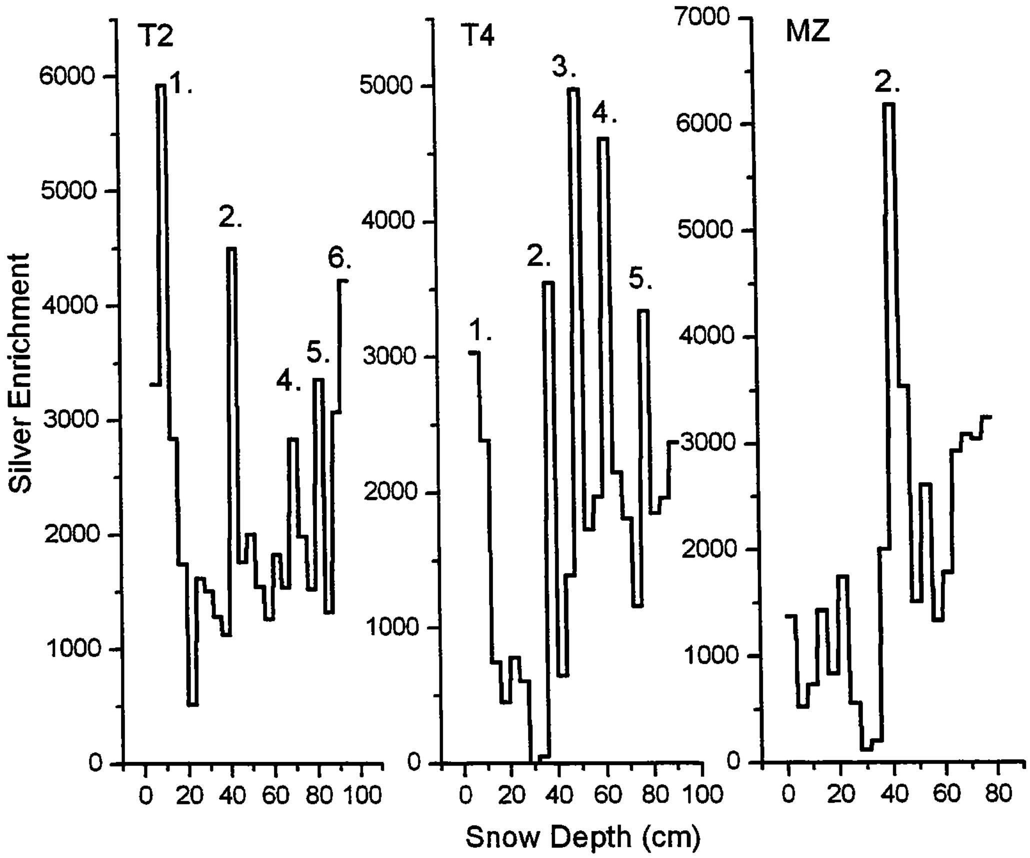

Figure 3 Silver enrichments for Sites T2, T4 and MZ as a function of snow depth

Significant silver layers were found in the snow pack at sites T2, T4 and MZ are labeled 1- 6. In general the silver layers also had the highest enrichment values (up to 6000) suggesting that silver iodide releases were the likely source. Storm dates for different sections of the snow pack were estimated using snow depths, densities and near by SNOTEL data. An example storm/snow depth reconstruction is shown in Figure 4. Estimated dates for the events are shown in Table 1. There are several differences between the three sites giving some indication of the targeting effectiveness. For example event 2 is the only significant event to impact all sites and the only event deposited to MZ. Atmospheric transport modeling will be required to describe event 2, which appears to be the most wide spread event.

Cesium and Indium were also determined in samples from the first field expedition and found to be present at the parts per quadrillion to low parts per trillion level. The low background for these elements means that the detection of the tracer releases should be relatively unambiguous.

Recently all the field sites were sampled during a second field expedition which was completed on the 3/11/04. These samples are yet to be analyzed, but will give a much clearer picture of the effectiveness of the IPCo operational seeding program.

Table 1. Silver Enrichment Events

Event	Estimated Date of Storm	Present at Sites	Possible Generator Source
1	01/06/04 -01/08/04	T2, T4	MM, KR, A*
2	12/27/03 – 1/01/04	T2, T4, MZ	MM, KR, BM, NGV, A*
3	12/27/03 – 1/01/04	T4	MM, KR, BM, NGV, A*
4	12/23/03 – 12/26/04	T2, T4	MM, KR, BM, NGV, A*
5	12/23/03 – 12/26/04	T2, T4	MM, KR, BM, NGV, A*
6	12/12/03 -12/15/03	T2	BM, BC, NGV, A*

Generator Codes: A* = Aircraft, M = Banner Mine, BC = Boise Cascade, KR =Kempner Ranch, MM = Mammoth Mine and NGV = North Garden Valley.

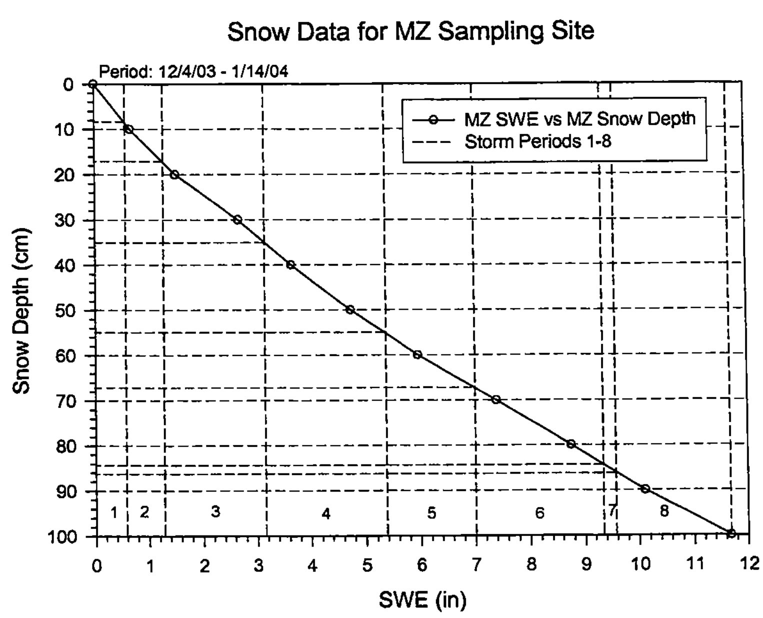

Figure 4 Estimates of storm periods in the MZ snow pack

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