BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF IDAHO POWER COMPANY'S APPLICATION FOR AUTHORITY TO DECREASE ITS RATES FOR ELECTRIC SERVICE FOR COSTS ASSOCIATED WITH THE BOARDMAN POWER PLANT.	)	CASE NO. IPC-E-20-32

IDAHO POWER COMPANY

DIRECT TESTIMONY

OF

RYAN N. ADELMAN

Q. Please state your name and business address.

A. My name is Ryan Adelman. My business address is 1221 West Idaho Street, Boise, Idaho 83702.

Q. By whom are you employed and in what capacity?

A. I am employed by Idaho Power Company ("Idaho Power" or "Company") as the Vice President of Power Supply.

Q. Please describe your educational background.

A. I graduated in 1996 from the University of Idaho, Moscow, Idaho, receiving a Bachelor of Science Degree in Civil Engineering. I am a registered professional engineer in the state of Idaho. In 2018, I earned a Master of Business Administration Degree through Boise State University's Executive MBA program. In 2019, I completed the Energy Executive Course through the University of Idaho.

Q. Please describe your work experience with Idaho Power.

A. From 2004 to 2008, I was employed by Idaho Power as an engineer in Power Production's Civil Engineering Group. In 2008, I became an Engineering Leader, initially responsible for the Langley Gulch power plant project, and later for the Power Production Civil Engineering Department. In 2015, I was promoted to Senior Manager of the Projects Department where I managed the Project Management and Cost and Controls group. In 2018, I

led the Company's Southeast Idaho area as a Regional Manager. In 2019, I was promoted to Vice President of Transmission and Distribution Engineering and Construction, later renamed to Planning, Engineering and Construction. In 2020, I transitioned to my current position, Vice President of Power Supply, where my responsibilities include supervision over Idaho Power's jointly-owned coal assets, load serving operations, and merchant activities.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to describe the Boardman power plant ("Boardman") investments made after June 1, 2012, and the prudence of those investments.

Q. Have you prepared any exhibits detailing the investments made since June 1, 2012?

A. Yes. Exhibit No. 3 details Idaho Power's share of the investments made at Boardman between June 1, 2012, and June 30, 2020. Projects over $40,000 include a project description and investment purpose classification for environmental compliance, the safe and economic operation of the plant, or for reliability. Exhibit No. 4 presents the comparison of Boardman budgeted capital investments and actual capital investments at the plant level.

I. BACKGROUND

Q. Please describe the time period for which Idaho Power is requesting prudence of Boardman investments.

A. In Case No. IPC-E-19-32, Idaho Power requested a prudence determination on incremental Boardman investments, or those investments made at the plant after June 1, 2012, when the Boardman balancing account was established. The Company's prudence request included actual Boardman investments through December 31, 2018. The Idaho Public Utilities Commission ("Commission") issued Order No. 34519 in the case deferring a prudence determination on the actual costs incurred since June 1, 2012, until a later filing to allow the Company additional time to document the costs were prudently incurred. Idaho Power's request for a prudence determination in this case is for all Boardman-related investments made during the June 1, 2012, through June 30, 2020, time period.

Q. Why is Idaho Power requesting a prudence determination for investments made through June 30, 2020?

A. Cessation of Boardman coal-fired operations is approaching and, as described in the testimony of Company witness, Matthew T. Larkin, Idaho Power is proposing to remove from customer rates the levelized revenue requirement associated with all Boardman investments. Therefore, a prudence determination on all actual Boardman

investments to-date is necessary.

II. CAPITAL BUDGET INVOLVEMENT

Q. As a 10 percent owner in the plant, is Idaho Power involved in the decision-making process related to capital investments?

A. Yes. As the plant operator, Portland General Electric ("PGE") manages the capital budget for Boardman. However, the Company is and always has been actively involved in the decision-making process in all matters associated with Boardman capital investments. While PGE, as the operator, vets and analyzes the need for specific capital replacements as they arise to continue reliable and safe operation of the plant, Idaho Power regularly participates in discussions of the capital investment forecast prepared by PGE, influencing the investments ultimately made.

Q. Please describe the Company's participation in the Boardman capital investment discussions.

A. There are two types of meetings in which projected capital investments at Boardman are discussed: Asset Management Plan ("AMP") meetings and Ownership meetings.

AMP meetings generally occur on an annual basis and are held with PGE and Idaho Power personnel, and Boardman plant management and staff, to discuss upcoming capital

projects identified by PGE corporate and plant engineering personnel. The intent of the meeting is for both Idaho Power and PGE personnel to ask questions of the plant personnel, most often the subject matter experts, any details surrounding the forecasted capital investments including the justification, timing and cost. The open dialog between the partners and the plant personnel leads to a refined, cost-effective forecasted capital spend.

The Ownership meetings, which occur annually at a minimum, also may include discussions of capital projects, both actual and upcoming, though the agendas often cover a broad range of Boardman-related topics and may not always discuss the forecasted projects in great detail.

Q. As a minority owner, does Idaho Power have any contractual rights to vote on items such as capital spend?

A. Yes. Under Section 3 of the Agreement for Construction, Ownership and Operation of the Number One Boardman Station on Carty Reservoir dated October 15, 1976, as amended ("Boardman Agreement"), the Company may appoint one member to the Operating Committee who has the right to vote Idaho Power's ownership share on matters such as capital additions budgets. If a matter is disapproved by Idaho Power, the Company will notify the Operating Committee of such item, stating the reason why and an acceptable alternative. A Project Consultant is then

appointed by PGE to determine if the capital investment is consistent with Prudent Utility Practice. Idaho Power has maintained a positive and constructive working relationship with PGE and plant personnel, who have been open to discussion of capital addition budgets. The Company has not been required to exercise its contractual rights specific to capital spend under the Boardman Agreement.

III. BOARDMAN INVESTMENTS SINCE 2012

Q. Have you identified the investments made at Boardman during the June 1, 2012, through June 30, 2020, time period?

A. Yes. Exhibit No. 3 presents Idaho Power's share of the investments made at Boardman between June 1, 2012, and June 30, 2020. In addition, for those projects over $40,000, the Company has included a project description and investment purpose classification as environmental compliance, the safe and economic operation of the plant, or reliability.

Environmental Compliance Investments

Q. What investments have been made for environmental compliance since June 1, 2012?

A. There have been two investments made at Boardman since June 1, 2012, that were for environmental compliance: (1) SO2 controls modifications, and (2) installation of a sewage lagoon liner. The first was a

known investment in emissions controls that was required even after the Environmental Protection Agency ("EPA") approved PGE's Boardman shut-down plan with coal-fired operations to cease in 2020. Through the Best Available Retrofit Technology ("BART") rulemaking process, the Oregon Regional Haze State Implementation Plan ("Oregon RHSIP"), and per the Oregon Department of Environmental Quality ("DEQ") Title V Operating permit and Acid Rain permit, SO2 emissions must be controlled and monitored. The investments included the addition of a dry sorbent injection system to control sulfur emissions from Boardman, as required by BART and the Oregon RHSIP. At the time, SO2 emissions were approximately 0.90 lb/MMBtu on a 30-boiler operating day rolling average, well above the emissions limit of 0.40 lb/MMBtu by July 1, 2014, and 0.30 lb/MMBtu by July 1, 2018.

Q. Was a dry sorbent injection system the only option for controlling sulfur emissions?

A. No. Wet and dry scrubber systems are an option, but they are more costly and could not be installed in time to meet the July 1, 2014, deadline. With a lower capital cost and shorter design and installation period, the dry sorbent injection system was the investment selected to comply with BART.

Q. What was the second project required for

environmental compliance?

A. The second environmental compliance investment was the installation of a sewage lagoon liner as a result of the Water Pollution Control Facilities ("WPCF") permit. The permit dictated that the onsite clay-lined sewage lagoons would be evaluated and reconditioned as necessary to continue service for Boardman. At the time the permit was issued, two of the three sewage lagoons used clay liners that were visually evaluated and determined to required reconditioning or relining per the WPCF permit and Oregon DEQ regulations. This project relined one of the two clay-lined ponds identified with a new synthetic liner system.

Q. Were any alternatives to the installation of a synthetic liner system considered?

A. Yes. An alternative to the synthetic liner system would have been the reconditioning of the existing clay liner. This practice involves temporarily removing the clay liner and re-grading the material to establish a new impermeable layer. Depending on the conditions, additional clay may be required to achieve regulatory required permeability levels. Due to the level of testing required to know for certain the reconditioning work required, it is unknown what the cost of the reconditioned clay liner would be. In addition, the Oregon DEQ

emphasizes the use of the synthetic liner for sewage lagoons. And finally, the synthetic liner reduces ongoing maintenance work required to mitigate vegetation growth that damages clay liners.

Q. How much have the environmental compliance investments contributed to the additions at Boardman since June 1, 2012?

A. At $2.8 million, the SO2 controls modifications were Idaho Power's largest investment at Boardman since June 1, 2012. The sewage lagoon liner was approximately $41,000, for a total of $2,819,836 in environmental compliance investments.

Plant Operation Safety Investments

Q. How many of the identified projects were associated with the safe and economic operation of the plant?

A. There were six projects associated with the safe and/or economic operation of the plant, three specific to the safety of plant personnel, and three specific to the economic operation of the plant.

Q. Please describe the projects specific to the safety of plant personnel.

A. The first was associated with an evaluation that began in 2008 of the shop and warehouse space used by the Boardman crews for maintenance and the storage of large

spare components on the turbine deck. With the new environmental and emissions controls installation on the horizon, it was determined the available work space in the plant would become more limited as the area would fill with more new components, requiring even more maintenance. Inadequate shop and warehouse space carried a risk of damaging spare parts due to contamination from maintenance activities happening beside them while also leading to inefficient work practices, potentially extending outages. This safety investment, completed in 2013, totaled approximately $210,000.

Q. What were the additional safety-related investments?

A. The remaining safety investments were associated with the combination of two projects, the upgrade of the fire protection system and the installation of a fire detection system, totaling approximately $300,000. The existing system was installed when the plant went commercial in 1980 and lacked several protective functions. The hardwired panel had push buttons and indicating lights and was no longer able to show a new alarm on the system if one already existed, decreasing the operator's awareness of the status of the plant while also requiring a series of manual actions. When evaluating the system, it was also determined fire detection sensors on

the generator step-up transformers needed to be replaced and connected to the fire detection system.

Q. Why were the fire detection sensors disconnected from the fire detection system?

A. The transformer deluge system was having sensor failure problems and had been removed from the automatic operation because it was causing the plant to trip. This put the main transformer at an increased risk if a fire were to occur while also potentially slowing the response time to extinguish a fire. At the time of the evaluation, it was determined the replacement cost for the loss of the transformer alone was over $3 million.

Q. Did the evaluation of the fire protection and fire detection systems identify any additional issues of concern?

A. Yes. An oil fire risk assessment was performed on all flammable lubricating and control oil systems to identify potential release scenarios, sources of large leaks, and determine the specific conditions necessary that would permit the safe shutdown of lube oil, seal oil and control oil systems. Because of the complexity of piping systems, the assessment was the only way to fully understand all potential leak points and identify the potential for an oil-fed fire. The assessment determined that not only did certain areas of the plant

have inadequate, aging fire protection, some areas had no fire protection at all. The result was investments in both the fire protection and fire detection systems.

Economic Plant Operation Investments

Q. What were the projects specific to the economic operation of the plant?

A. There were three projects associated with the economic operation of the plant: two involved the water treatment system for Boardman, and the third was the purchase of a pulverizer gear box.

Q. Please describe the water treatment system.

A. The water treatment system is composed of three sub-systems: the polisher, the demineralizer, and the raw water. Each sub-system is partially automated, but they did not communicate with each other, posing logistic challenges for maintenance upkeep.

Q. What is the importance of the water treatment system?

A. Steam generators require very high purity water to produce high purity steam to protect turbines from deposition and corrosion affects. The water treatment system has four interrelated functions that start with the raw water system that filters and chlorinates water from the Carty reservoir to make it suitable for demineralization. The result is filtered water which is

used in the demineralization system where it is deionized to make it suitable for condensate makeup to the boiler. Once the water is demineralized, it is tested by the laboratory to ensure it is suitable for makeup to the condensate system. If the water passes testing, it is then transferred to the condensate storage tank where it is further demineralized by a condensate polisher system at which point it is then ready for the steam generator.

Q. What work was done that resulted in additional investments in the water treatment system?

A. The first project since June 1, 2012, associated with the water treatment system for Boardman automated the three sub-systems allowing them to communicate flows and available storage tank volumes to each other. Each of the three systems has its own treatment phase, where the water is conditioned, regenerated, and prepared for another treatment. This cleaning process generates a waste product that must be contained in the lined evaporation ponds while also producing a high volume of rinse water suitable for reuse. The reusable rinse water, between 1 - 1.5 million gallons per month, is no longer sent to the evaporation pond now that the three sub-systems communicate with each other, reducing the evaporation rate of the ponds. In addition, the investment reduced maintenance and capital inventory

requirements for the sub-systems.

Q. What was the second project involving the water treatment system?

A. The second investment was the installation of water recovery from the demineralizing system. The demineralizing system recovers over 250,000 gallons of water each month in the process. Prior to the water recovery installation, the used water went to the sump and eventually the evaporation pond.

Q. How does the water recovery system benefit the plant?

A. The project involved the installation of two pumps with piping and valves to recover the demineralized water used in polisher transfers. This allows for the recirculation of the water back into the demineralizing water system, reducing the volume sent to the evaporation pond.

Q. Were any alternatives to the water treatment system considered?

A. Yes. The plant could have continued to use the existing system at higher maintenance costs, increasing approximately 15 percent each year, until 2015, at which time a mandatory upgrade would have been required. In addition, in 2014, it was expected an additional lined evaporation pond would become necessary too, at an

estimated cost of $500,000. In addition, because the water has already had its organic constituents removed, processing and chemical costs were reduced. The investment in the water recovery system was the lowest cost alternative. The Company's share of the investment costs of the two water treatment system projects was approximately $100,000.

Q. What was the third project specific to the economic operation of the plant?

A. The final project associated with the economic operation of the plant, at a cost of approximately $48,000 to Idaho Power, involved the purchase of two used pulverizer gear boxes to facilitate the fabrication of a single like-new spare gearbox. This gearbox was then placed into service to allow for maintenance on the aging gearboxes that were in service at the time. In total, $665,838 has been spent on the safe and economic operation of the plant since June 1, 2012.

Plant Reliability Investments

Q. How many of the projects identified were associated with reliability?

A. Two of the 16 projects over $40,000 were investments in reliability and an additional six projects were a combination of reliability and safety investments. The largest single investment made since June 1, 2012, was

the result of a water hammer, or hydraulic shock, event in July 2013. The event caused the cold reheat pipe supports to break, dropping the piping and creating structural damage. Boardman went into a forced outage, eliminating the immediate safety hazard, so that the cold reheat pipe could be replaced and realigned. The plant was insured for an event of such magnitude and insurance proceeds helped reduce Idaho Power's share of this project to a cost of approximately $200,000. The next required reliability investment was associated with the upgrade of the control system of the ash handling system.

Q. What is an ash handling system?

A. The ash handling system transfers coal ash, the residual from burning coal that includes solid materials, away from boilers for disposal. Regulations are in place for the safe and efficient transfer and the systems vary for the different coal ash residuals. The Boardman ash handling system controls three systems: the fly ash handling system, the bottom ash handling system, and the economizer ash handling system.

The existing Boardman control system had been running the ash handling system for over 30 years, and was the original plant equipment. The equipment had been discontinued by the manufacturer and spare parts on the market were limited. Because this system removes all the

ash produced by the boiler and precipitator and stores it safely, it can be detrimental to plant operations if a failure occurs. This project upgraded the input/output, logic controllers and communication in the ash handling system.

Q. Please describe the projects that were a combination of reliability and safety investments.

A. The projects that were a combination of reliability and safety investments involved the replacement of variable speed drives and control room chillers and the purchase of miscellaneous pumps, valves, and motors. The largest of the investments was the replacement of variable speed drives. Boardman's four induced draft fans, which are 3,500 horse power each, have variable speed drives to control furnace draft, allowing the motor to run at a slower speed, increasing energy efficiency. The existing variable speed drives were aging and becoming increasingly unreliable. In addition, spare parts were no longer available from the manufacturer. Within six months, the plant experienced two separate failures of the variable speed drives, reducing Boardman's capability while also creating a safety hazard. As a result, two of the four variable speed drives were replaced in 2013, and the remaining two in 2014, for a total reliability and safety investment of approximately $340,000.

Q. Were any alternatives to the variable speed drives considered?

A. Yes, it is possible to run the fans without the variable speed drives however, an energy efficiency savings resulting from the variable speed drive would be lost and the cost to reconfigure the fans was estimated to be approximately $200,000.

Q. What was the purpose for the replacement of the control room chillers?

A. In 2013, the chillers that provide cooling for the control room and the cable spreading room tripped. The chillers were old and mechanical parts were no longer available. The plant personnel were keeping the chillers operating on maintenance creativity for several years, cobbling together parts. There was concern if they tripped again, they would no longer be repairable. In addition, the chillers were using a refrigerant that is no longer made in the United States, making it more difficult and costly to obtain.

Q. What happens if the chillers are not in working order?

A. If the chillers failed, the control room would be unhabitable in the hotter months, creating a safety issue for plant personnel. In the cable spreading room, which must be kept below certain temperatures, a chiller

failure could cause the plant to trip due to the loss of the distributed control system, creating a reliability issue. The control room chiller replacement was $61,235.

Q. Were there any other investments associated with a combination of reliability and safety?

A. Yes. In 2012, 2014, and 2016, the Company invested $40,448, $42,062, and $54,838, respectively, in miscellaneous pumps, valves and motors, necessary to maintain functionality, reliability and the safety of the plant. The projects are referred to as blanket projects and are intended to capture unexpected failures at the plant.

Q. Why are they referred to as blanket projects?

A. Blanket projects were created as the plant was nearing its end-of-life when specific capital projects were no longer occurring as often and, therefore, forecasted spend was minimal. The blanket project identification is intended to capture capital issues that arise, typically equipment failures, at which time the plant will assign a new budget identification and work order for the capital investment. With these three blanket projects, the total investment in projects associated with a combination of reliability and safety investments was $542,782.

Forecast to Actual Investment Comparison

Q. You indicated Exhibit No. 4 presents a

comparison of Boardman budgeted capital investments and actual capital investments. What is the purpose of the comparison of forecast and actual investments?

A. In Case No. IPC-E-19-32, in their prudence review, Commission Staff requested a comparison of the actual investments by project as detailed in the Company's records with the budgeted investments included as part of PGE's forecast for Boardman. The information was not readily available for Staff's review because of difficulties compiling the data and, therefore, there was insufficient time to review this detail in that case.

Q. Why was it difficult to prepare the comparison?

A. As part of the Boardman Annual Reviews filed with the Commission pursuant to Order Nos. 32457 and 32549, the Company presented the capital budget by project for Boardman over its remaining life, as prepared by PGE. The results of this budget were used to estimate the levelized revenue requirement associated with incremental investments made after June 1, 2012. Each year, Idaho Power updated the incremental investments to include actuals through year-end and revised forecasted investments for the remaining life of Boardman using the latest budget from the plant. Forecast information from PGE was utilized because it reflected the most accurate and readily-available

information at the time the Boardman Annual Reviews were prepared.

However, because the budget information was prepared by PGE, both the Allowance for Funds Used During Construction and overhead rates differ from Idaho Power's, and the timing at which the costs are incurred varied as Idaho Power records the investment when billed, or with a one-month lag, resulting in differing in-service dates of the projects between the partners. As a result, comparing actual project spend recorded by the Company to forecasted project spend provided in the Boardman Annual Reviews did not result in a consistent comparison from which budget-to-actuals variances could be determined on a project-by-project basis.

To remedy this issue and assist in Commission Staff's review, Idaho Power requested from PGE the total plant level actual capital addition spend by project for the 2012 through 2019 time period. The Company added to this data the capital budget by project as previously reported in the Boardman Annual Reviews and computed the variance between the two. The detail is presented in Exhibit No. 4.

Q. You indicated Idaho Power updated the budget in the Boardman Annual Review filings with the most recent capital forecast from the plant. What budget amounts is the

Company presenting in Exhibit No. 4?

A. Exhibit No. 4 presents the budget contained in the Boardman Annual Review from the prior year, e.g. the 2014 budget amounts presented were included in the 2013 Boardman Annual Review as the forecast of investments for 2014.

Q. Were there any other complexities with preparing the comparison?

A. Yes. Another complexity is associated with the difficulty forecasting capital additions at a plant nearing its end-of-life. Because the plant reduced capital spend to include only that required for environmental compliance or to maintain reliability or safety for only eight more years, the budget often did not identify specific capital projects. As a result, Idaho Power has separated the actual to budget comparison in three categories within Exhibit No. 4: (1) planned projects, (2) blanket projects, and (3) unplanned projects.

Q. Please describe the categories for which the Company has presented the project level detail.

A. Planned projects are those projects for which the plant anticipated and budgeted. Blanket projects, as I described earlier in my testimony, were created as the plant was nearing its end-of-life when specific capital projects were no longer occurring as often. The blanket

project identification is intended to capture capital issues that arise, typically equipment failures, at which time the plant will assign a new budget identification and work order for the capital investment. These new budget identifications and work orders appear in the unplanned projects section of Exhibit No. 4.

Q. How do the actuals compare to the budget of the planned projects?

A. In total, the actual costs of the planned projects are one percent lower than the budgeted costs for the same planned projects. Of all projects combined, actual costs were six percent higher than budgeted. However, because of the complexities I discussed, this budget comparison simply reflects the variance between the plant's forecast for the following year and what actually occurred; it is not a comparison to amounts the Company is currently recovering in rates. Therefore, it is also important to review the Idaho Power-specific actual to forecast comparison included in the Boardman levelized revenue requirement computation, as discussed in Mr. Larkin's testimony.

Q. Why is the Idaho Power-specific actual to forecast comparison included in the Boardman levelized revenue requirement computation valuable?

A. At the time the Boardman balancing account was

established, the levelized revenue requirement associated with incremental investments included forecasted capital additions of approximately $8.01 million. As shown in Exhibit No. 1 to Mr. Larkin's testimony, the most recent levelized revenue requirement computation includes only $4.99 million of investments made at Boardman since June 1, 2012. The Company has discussed the comparison of actual investments to forecasted investments in each of its Annual Reports noting that since establishment, in only one year has the actual level of investments exceeded that forecasted when the balancing account commenced and it was simply due the timing of the project completion, as the project did not close to Idaho Power's records prior to year-end.

Q. Please summarize your testimony.

A. Idaho Power has been required to make investments at Boardman during the June 1, 2012, through June 30, 2020, time period, and has been actively involved in the capital spend decision making process at the plant. Of the 16 projects identified in which Idaho Power's share of the investments was more than $40,000, two projects totaling $2,819,836 were for environmental compliance, six totaling $665,838 were for the safe and economic operation of the plant, two totaling $283,655 were for reliability purposes, and six totaling $542,782 were for a combination

of reliability and safety. All investments addressed in this filing were prudent and in the public interest.

Q. Does this conclude your testimony?

A. Yes.

DECLARATION OF RYAN N. ADELMAN

I, Ryan N. Adelman, declare under penalty of perjury under the laws of the state of Idaho:

1. My name is Ryan N. Adelman. I am employed by Idaho Power Company as the Vice President of Power Supply.

2. On behalf of Idaho Power, I present this pre-filed direct testimony and Exhibit Nos. 3-4 in this matter.

3. To the best of my knowledge, my pre-filed direct testimony and exhibits are true and accurate.

I hereby declare that the above statement is true to the best of my knowledge and belief, and that I understand it is made for use as evidence before the Idaho Public Utilities Commission and is subject to penalty for perjury.

SIGNED this 21st day of August 2020, at Boise, Idaho.

Signed:

DECLARATION OF RYAN N. ADELMAN

I, Ryan N. Adelman, declare under penalty of perjury under the laws of the state of Idaho:

1. My name is Ryan N. Adelman. I am employed by Idaho Power Company as the Vice President of Power Supply.

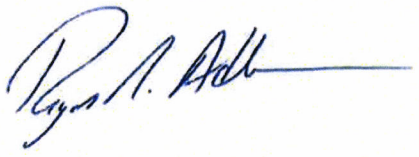
2. On behalf of Idaho Power, I present this pre-filed direct testimony and Exhibit Nos. 3-4 in this matter.

3. To the best of my knowledge, my pre-filed direct testimony and exhibits are true and accurate.

I hereby declare that the above statement is true to the best of my knowledge and belief, and that I understand it is made for use as evidence before the Idaho Public Utilities Commission and is subject to penalty for perjury.

SIGNED this 21st day of August 2020, at Boise, Idaho.

Signed:



BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-20-32

IDAHO POWER COMPANY

ADELMAN, DI

TESTIMONY

EXHIBIT NO. 3

BOARDMAN PLANT ADDITIONS: Jun 1, 2012 - Jun 30, 2020

Project	Description	Total	Purpose	Project Description/Justification
27363452	BOARDMAN 1-1760 SO2 CONTROLS MODIFICATION BART	$ 2,778,967	Environmental	Through the BART rulemaking process, the Oregon Regional Haze State Implementation Plan ("RHSIP"), and per the Oregon DOE Quality Title V Operating permit and Acid Rain permit, SO2 emissions must be controlled and monitored. This project resulted in an addition of a dry sorbent injection system to control sulfur emissions from Boardman, as required by BART and the Oregon RHSIP.
27363448	BOARDMAN 1-1450 REPLACE VARIABLE SPEED DRIVES FOR ID FANS	$ 257,808	Reliability/Safety	This project replaced the variable speed drives (VSD) on two of Boardman's four ID fans. The fans are 3500 horsepower each and are used to control furnace draft. The fan failures were increasing in frequency and severity and parts were no longer replaceable due to age. The VSD allows the motor to run at a slower speed, providing significant energy efficiency and savings.
27394387	BOARDMAN 3-0517 COLD REHEAT PIPING REPLACEMENT	$ 211,129	Reliability	Boardman experienced a water hammer event in July 2013 that caused the 36-inch diameter cold reheat pipe supports to break and caused the piping to move creating structural damage. The cold reheat pipe, which is critical to plant operation, was replaced and realigned.
27300604	BOARDMAN 24806 EXPAND SHOP & WAREHOUSE	$ 210,344	Safety	The maintenance and weld shop expansion created an additional 4,300 square feet of working space for the Boardman maintenance crews. It allowed for large equipment overhauls including pulverizer rollers and condensate pumps to occur in the shop rather than in the overhaul location on the turbine deck and crane bay. When the turbine deck and crane bay were utilized for the work, it created communication issues, impeded emergency egress, and the welding activities set off smoke and fire alarms because of the inadequate ventilation. The expansion created a safer work environment and more efficient work space for the Boardman maintenance crews.
27300599	BOARDMAN 24796 INSTALL NEW FIRE DETECTION SYSTEM	$ 178,344	Safety	Installation of a new fire detection system including the upgrade of the fire protection sensors on the main transformers. In addition, it replaced all the fire detection panels in the plant, the operator interface and alarming system and the GSU transformer fire detection sensors. The new system also increased the expandability of the fire protection system to allow for future required upgrades. The old system was installed when the plant went commercial in 1980 and lacked several protective functions provided in modern systems.
27300598	BOARDMAN 24688 UPGRADE FIRE PROTECTION SYSTEM	$ 129,832	Safety	This project modified the plant and fire protection system to reduce the risk associated with a lubricating and control oil fire. It included the improvement of water spray protection over the hydrogen seal oil skid, lube oil skid, and main feedwater pumps, provided a perimeter line of sprinklers around the pedestal beneath the operating deck, and provided shielding and water spray over the lube oil/EHC interface valve at Bearing No. 1. Tests conducted prior to modification indicated the intensity and severity of oil-fed fires and that control of such fires depends on the sprinkler systems or other waterbased protection, as well as on containment of the escapting oil and drainage away to a safe location.
27398057	BOARDMAN 1-3348 REPLACE VARIABLE SPEED DRIVES FOR ID FANS - 2014	$ 86,390	Reliability/Safety	This project replaced the variable speed drives (VSD) on two of Boardman's four ID fans. The fans are 3500 horsepower each and are used to control furnace draft. The fan failures were increasing in frequency and severity and parts were no longer replaceable due to age. The VSD allows the motor to run at a slower speed, providing significant energy efficiency and savings.
27369029	BOARDMAN 26938 UPGRADE ASH HANDLING SYSTEM	$ 72,526	Reliability	The existing Boardman control system had been running the ash handling system for over 30 years and was the original plant equipment. The equipment had been discontinued by the manufacturer and spare parts on the market were limited. Because this system removes all the ash produced by the boiler and precipitator and stores it safely, it can be detrimental to plant operations if a failure occurs. This project upgraded the input/output, logic controllers and communication in the ash handling system.
27405561	BOARDMAN 1-3894 REPLACE CONTROL ROOM CHILLERS	$ 61,235	Reliability/Safety	The control room chillers were original equipment and at the end of their life. Replacement was needed to keep the control room at a reasonable temperature year round.
27405228	BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS	$ 54,838	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2014. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27328918	BOARDMAN 26256 INSTALL WATER RECOVERY FROM DEMINERALIZING SYSTEM	$ 50,676	Safety	This project installed a water recovery from the demineralizing system to recover the demineralized water used in polisher transfers. This allows for the recirculation of the water back into the denim water system, reducing the volume sent to the evaporation pond, resulting in reduced processing and chemical costs.
27387019	BOARDMAN 1-1486 ADD WATER TREATMENT AUTOMATION	$ 48,600	Safety	The water treatment system is made up of three sub-systems that had their own treatment phase where the water was conditioned, regenerated and prepared for another treatment. This project automated the three sub-systems allowing them to communicate flows and available storage tank volumes to each other, reducing plant water consumption and helping reduce water sent to the evaporation pond. It resulted in cost savings while also helps keep evaporation pond levels at a manageable level.
27403626	BOARDMAN 1-4035 PURCHASE PULVERIZER GEARBOX	$ 48,042	Safety	Two used gearboxes were purchased to facilitate the fabrication of one "like-new" spare gearbox to be placed in-service while maintenance was done on the existing gearboxes.
27452713	BOARDMAN 1-1549 2016 MISC PUMPS VALVES & MOTORS	$ 42,062	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2016. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27385087	BOARDMAN 1-2702 INSTALL SEWAGE LAGOON LINER	$ 40,869	Environmental	The Water Pollution Control Facilities ("WPCF") permit dictated that the onsite clay lined sewage lagoons would be evaluated and reconditioned as necessary to continue service for Boardman. At the time, two of the three sewage lagoons used clay liners that were visually evaluated and determined required reconditioning or relining per the WPCF permit and DEQ regulations. This project relined one of the two clay-lined ponds identified with a new synthetic liner system.
27361898	BOARDMAN 23260 2012 MISC PUMPS VALVES & MOTORS	$ 40,448	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2012. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27383255	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 13	$ 38,629		
27324968	BOARDMAN 26445 BOILER CLEANING SYSTEM UPGRADE	$ 37,455		
27421549	BOARDMAN 1-3979 UPGRADE CALCULATION ENGINE	$ 36,853		
27437109	BOARDMAN 1-5039 INSTALL VFD FOR DUMPER DRIVES	$ 35,791		
27324963	BOARDMAN 26307 INSTALL NEW PLUGGED COAL CHUTE DETECTORS	$ 35,506		
27405562	BOARDMAN 1-2366 INSTALL AGC EQUIPMENT	$ 33,148		
27362130	BOARDMAN 24795 REPLACE GAITRONICS PAGING	$ 32,491		
27396520	BOARDMAN 1-2788 CYBER SECURITY UPGRADES	$ 31,092		
27445809	BOARDMAN 1-5595 REPLACE COALYARD RAIL SECTIONS	$ 30,696		
27368150	BOARDMAN P35350 1-1896 INSTALL LED STACK LIGHTING	$ 30,454		
27510481	BOARDMAN 1-7194 GEN CIPV5 SECURITY IMPROVEMENTS	$ 29,192		
27478623	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 17	$ 28,430		
27428434	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 15	$ 28,124		
27369072	BOARDMAN 1- 2334 INSTALL REDUNDANT MECURY CEMS	$ 26,478		
27301397	BOARDMAN 25452 UPGRADE SWA BUILDING HVAC CHILLERS	$ 26,075		
27396521	BOARDMAN 1-3800 U1/U2 BELT REPLACEMENT	$ 25,327		
27362131	BOARDMAN 1-1415 REPLACE DUST SUPPRESSION SYSTEM	$ 24,755		
27383257	BOARDMAN 1-1549 2013 MISC PUMPS VALVES & MOTORS	$ 23,230		
27361908	BOARDMAN 1-1839 REPLACE COAL YARD BELT	$ 22,971		

BOARDMAN PLANT ADDITIONS: Jun 1, 2012 - Jun 30, 2020

Project	Description	Total	Purpose	Project Description/Justification
27405230	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	$ 22,655		
27413973	BOARDMAN 1-4177 UPGRADE STACK ELEVATOR CONTROLS	$ 20,272		
27428430	BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS	$ 18,813		
27504947	BOARDMAN 1-7757 REPLACE DAMAGED RAIL SECTIONS	$ 18,562		
27452714	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2016	$ 17,945		
27523659	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2019	$ 17,863		
27452711	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 16	$ 17,784		
27419412	BOARDMAN 1-4067 REPLACE R2 CONVEYOR BELT	$ 17,398		
27452741	BOARDMAN 1-5423 WELL & STORM WATER STRUCTURE	$ 16,656		
27428431	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	$ 16,540		
27435077	BOARDMAN 1-4973 REMODEL CONTROL ROOM	$ 16,480		
27491672	BOARDMAN 1-7364 FAILED DRY SORBENT INJECTION BLOWER REPLACEMENT	$ 16,332		
27392270	BOARDMAN 1-3194 REPLACE CONVEYOR BELT R-1	$ 16,104		
27343976	BOARDMAN 2010 GENERIC RETIREMENTS	$ 15,295		
27371159	BOARDMAN 1-2585 REPLACE COAL DUMPER CONDUIT	$ 14,592		
27387021	BOARDMAN 1-3336 INSTALL PRECIP ACOUSTIC HORNS	$ 14,282		
27372780	BOARDMAN 1-2867 INSTALL WASTEWATER FLOW METERS	$ 14,196		
27481039	BOARDMAN 1-6934 REPLACE COALYARD RAIL/TIES	$ 13,899		
27405232	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2014	$ 13,684		
27361896	BOARDMAN UNDISTRIBUTED WORK ORDER 2012	$ 13,390		
27383256	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2013	$ 13,179		
27383254	BOARDMAN 26899 1-1506 INSTALL PLATFORMS 13	$ 12,981		
27500625	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2018	$ 11,948		
27369026	BOARDMAN 1-2099 BN - INSTALL CARTY RESERVIOR FLOW METER	$ 11,116		
27500676	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2018	$ 10,934		
27478619	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 17	$ 10,571		
27383410	BOARDMAN 1-3200 REPLACE TPS DUAL SUPPRESSION SYSTEM	$ 10,516		
27385085	BOARDMAN 25503 INSTALL TRANSFORMER GAS MONITORING SYSTEM	$ 10,397		
27428429	BOARDMAN CONSTRUCTION OVERHEAD WORK ORDER 2015	$ 10,331		
27369028	BOARDMAN 1-2114 UPGRADE LUBE OIL PURIFIER CONTROL	$ 10,284		
27437108	BOARDMAN 1-5038 UPGRADE 250V STATION BATTERY	$ 9,950		
27383253	BOARDMAN 25146 26240 1-2769 DESKTOP COMPUTER VIN & GROWTH 13	$ 9,859		
27452715	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2016	$ 9,776		
27539444	BOARDMAN 1-9636 UPGRADE ELECTRIC BOILER CONTROLS	$ 9,244		
27361901	BOARDMAN 7-0582 MINOR TOOLS & EQUIPMENT 2012	$ 9,035		
27541909	BOARDMAN 1-9772 UPGRADE ID FAN VFD CHOKE COIL	$ 8,590		
27372782	BOARDMAN 1-2701 INSTALL TURB CRANE SAFETY IMPROVEMENTS	$ 8,228		
27314076	BOARDMAN 25924 REPLACE UPPER 30% BOILER REHEATER	$ 7,785		
27478620	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2017	$ 6,911		
27356952	BOARDMAN 10000001074 INSTALL CLIMB ASSIST IN STACK	$ 6,524		
27500623	BOARDMAN 1-1080 1-7070 PURCHASE RETIRE VEHICLES 18	$ 6,498		
27389116	BOARDMAN 1-3352 PURCHASE CONTROL INSTRUMENTS	$ 6,411		
27514779	BOARDMAN 1-7432 REPLACE CHECK VALVE FW1013	$ 6,287		
27451197	BOARDMAN 1-5699 INSTALL BELTING ON SR-2 BOOM	$ 6,201		
27471375	BOARDMAN 1-6131 INSTALL CYBER SECURITY NIDS	$ 6,033		
27432627	BOARDMAN 1-4979 INSTALL POWER/BLOC LOTO DEVICES	$ 5,539		
27481090	BOARDMAN 1-6758 UPGRADE BURNER MANAGEMENT FLAME AMP	$ 5,460		
27465262	BOARDMAN 1-6125 UPGRADE TOWER ROAD RXR CROSSING	$ 5,280		
27478667	BOARDMAN 1-6523 REPLACE COAL CONDUIT SECTIONS	$ 4,974		
27421548	BOARDMAN 1-4742 INSTALL VIDEO CONFERENCING	$ 4,768		
27478622	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2017	$ 4,563		
27383258	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2013	$ 4,393		
27383259	BOARDMAN 1-2019 S. SETTLING POND EROSION PREVENTION	$ 4,290		

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-20-32

IDAHO POWER COMPANY

ADELMAN, DI

TESTIMONY

EXHIBIT NO. 4

Boardman - 2012 through 2019 Capital - Actuals vs. Budget
Plant Level - PGE 90%, IPC 10%

Project Description	2012		2013		2014		2015		2016		2017		2018		2019		Total		
	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	Budget	Actuals	IPC Budget	Variance
BN - Misc. Pumps, Valves, Motors	414,198	315,000	233,324	433,850	546,326	303,750	187,975	430,070	420,324	300,000	284,101	300,000	109,126	324,000	(170,500)	324,000	2,024,876	2,730,670	-26%
P24688 - Boardman - Upgrade Fire Protection	898,442		112,606	212,340	518												1,011,566	212,340	376%
P24795 - BN-Replace Gaitronics Paging	305,790	500,000	5,379														311,169	500,000	-38%
P24806 - BN: Expand Maint & Weld Shops	2,112,086	1,500,000	(26,540)														2,085,547	1,500,000	39%
BN - Desktop Computer Fitness Program	1,478	50,000	98,194	91,380	3,188	88,810				45,600				64,800		10,800	102,860	351,390	-71%
P25452 - BN Replace Admin Bldg HVAC Chillers	7,113		243,297	292,100	5,431												255,840	292,100	-12%
P25499 - Gen Plants-Instl Transf Gas Mon			51,269	123,790	32,571	20,360	14,589		532		5,224						104,186	144,150	-28%
P25924 - Boardman - Replace Upper 30% Boiler	(1,066,899)																(1,066,899)	-	#DIV/0!
P26266 - BN-Install New Fire Detection Sys	1,107,588	700,000	558,573	743,860	18,324												1,684,486	1,443,860	17%
BART-Bdmn Air Quality Controls	18,696,034	15,000,000	17,145,877	18,441,780	952,353		4,653										36,798,917	33,441,780	10%
P26938 - Boardman - Upgrade Ash Handling Sys	183,729	130,000	306,250	326,020	234,279												724,258	456,020	59%
P27107 - Bdmn-Install Coal Dust Suppression	136,310	200,000															136,310	200,000	-32%
P27450 - Boardman - Decommissioning Estimate										208,540		179,730					-	388,270	-100%
BN: Vehicle Vintage Replacement	41,525	270,000	386,284	556,930	2,635	183,660	281,000		207,521	768,660	105,638	512,010	64,848	108,000	7,499	108,000	1,096,950	2,507,260	-56%
P35182 - BN - Replace VSDs for ID Fans	421,750	500,000	2,114,858	1,642,450	846,582	1,398,310											3,383,190	3,540,760	-4%
P35193 - BN-Add Water Treatment Automation			108,314	268,170	368,548	669,270											476,862	1,137,440	-58%
P35469 - BN - Replace Coal Dumper Conduit	149,856	50,000															149,856	50,000	200%
BN - Replace Coal Conduit Sections											49,118		41,217	81,000			90,335	81,000	12%
P35500 - BN: Install Sewage Lagoon Liner			11,815	621,220	762,831	885,680	10,697										785,342	1,516,900	-48%
P36108 - Bdmn-CCR Landfill Wells/SWStruct									165,352	568,680							165,352	568,680	-71%
BN: Replace Damaged Rail Sections													183,811	162,000			183,811	162,000	13%
BN - Generating Plants Cyber Security			262,133	347,600	27,809		29,272		52,569		7,917						379,699	347,600	9%
Total Projects	**23,409,001**	**19,215,000**	**21,611,634**	**24,101,490**	**3,801,395**	**3,759,840**	**528,186**	**430,070**	**846,298**	**1,891,480**	**451,997**	**991,740**	**399,002**	**739,800**	**(163,001)**	**442,800**	**50,884,512**	**51,572,220**	**-1%**
Blanket Projects																			
P35172 - PSES - Generation Fitness Fund		2,769,310		662,770		803,250		875,610		500,000		500,000		270,000		270,000	-	6,650,940	-100%
PCND94 - Boardman-Purchase Minor Tools & Equ	123,060	90,000	131,762		226,419	101,250	165,266	80,000	179,319	75,000	69,064	50,000	119,319	54,000	2,677	54,000	1,016,885	504,250	102%
P24067 - Boardman - Install Platforms	21,006		129,695											54,000		54,000	150,701	108,000	40%
P35974 - Boardman Business Plan														162,000		162,000	-	324,000	-100%
P35591 - As-Built Drawings - Generation	3,077		47,885		132,474	18,470	23,417		97,686	173,150	45,597	110,840	23,525		(11,284)		362,378	302,460	20%
Total Blanket Projects	**147,144**	**2,859,310**	**309,342**	**662,770**	**358,893**	**922,970**	**188,683**	**955,610**	**277,005**	**748,150**	**114,661**	**660,840**	**142,843**	**540,000**	**(8,607)**	**540,000**	**1,529,964**	**7,889,650**	
Unplanned Projects																			
P35210 - BN Capital Tools & Lab Equip	80,962																80,962	-	
P35350 - BN Install new LED lighting	304,537																304,537	-	
BN - Install Climb Assist in Stack	153,363																153,363	-	
BN - Replace SS 34.5kv cutouts	19,853																19,853	-	
BN - Replace Y1 Coal Yard Belt	919,352																919,352	-	
BN: S. Settling Pond Erosion Preven	42,899																42,899	-	
Boardman - coal chute detectors	592,604																592,604	-	
Boardman-Upgrade Precipitator Ctls	29,401																29,401	-	
P35587 - BN: Install Redundant Mercury CEMS	259,269		15,193														274,461	-	
P26256 - Boardman - Install Water Recovery f	600,709		1,027														601,735	-	
P35564 - BN - Install Wastewater Flow Meters	123,738		16,560														140,298	-	
P35162 - BN: Replace Dust Suppression Sys	140,183		202,489														342,671	-	
BN: Replace Flooring @ Coal Yard	7,738		18,087														25,824	-	
BN: Upgrade Lube Oil Purifier Cntrl	41,349		53,124														94,473	-	
BN-Install Turb Crane Safety Impv	71,985		9,374														81,359	-	
BN - Install Carty Res Flow Meter	9,492		92,160														101,652	-	
P35484 - 230kV Pole Replacements			87,844														87,844	-	
P35643 - BN Purchase New Air Compressor			12,500														12,500	-	
BN - Replace Conveyer Belt R-1			161,043														161,043	-	
BN: Install Precip Acoustic Horns			139,742														139,742	-	
P35783 - BN-Cold Reheat Piping Replacemnt			3,200,187		(1,133,664)												2,066,523	-	
BN: Bridge Crane Access Ladder			45		11,230												11,276	-	
BN: Enhance Physical Security			(189)		29,311												29,122	-	
P35987 - BN: Buy Pulverizer gearbox			30,000		64,000		238,828		125,239								458,067	-	
BN: Purchase Control Instruments			59,375		1,380								251				61,006	-	
BN: U1/U2 Belt Replacement			230,849				21,066										251,916	-	
P35787 - BN: Replace Control Room Chillers					608,405												608,405	-	
BN: Upgrade Stack Elevator Controls					201,932												201,932	-	
BN: Install AGC Equipment					273,765		24,326										298,090	-	
BN: Install Video Conferencing					43,486		4,138										47,624	-	
BN: Replace R2 Conveyor Belt					131,015		40,533										171,547	-	
P35807 - BN: Upgrade Calculational Engine					346,544		26,252		(6,340)								366,456	-	
P36140 - BN - Purchase Flat Bed Trailer							4,899										4,899	-	
BN: Remodel Control Room							163,972										163,972	-	
Install OH/UG Service SVPRM							997										997	-	
BN - Replace Coal Conduit Bends							11,141										11,141	-	
BOARDMAN-OPTIMIZE INTAKE WATER TEMP							217										217	-	
BN: Install Belting on SR-2 Boom							15,334		46,491								61,825	-	
BN: Install Power/Bloc LOTO devices							40,154		14,979								55,133	-	
P36004 - BN: Install VFD for Dumper Drives							352,814		3,339								356,153	-	
BN: Upgrade 250V Station Battery							95,646		1,400								97,046	-	
BN: Upgrade CEMS Data Controller							16,929		10,130								27,059	-	
P36143 - BN: Replace Coalyard Rail Sections							308,250		(8,805)		138,490						442,936	-	
BN: Replace Coal Gallery Belt R15B									6,130								6,130	-	

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BN: Upgrade Tower Rd RXR Crossing									105,657							105,657	-	
Virtual Servers for CEMS Monitoring									(3,400)							(3,400)	-	
BN: Upgrade Burner Mgmt Flame Amp											54,088					54,088	-	
BN - Failed DSI Blower Replacement											161,712					161,712	-	
BN: Replace S Gallery Belt 12A											21,467					21,467	-	
BN - Megawatt Meters for Backup													28,455		(40)	28,415	-	
P36445 - BN: Gen CIPv5 Security Improvements													305,200		7,047	312,247	-	
BN: Replace Check Valve FW1013													62,667			62,667	-	
Total Unplanned Projects	3,397,433	-	4,329,410	-	577,484	-	1,365,495	-	299,822	-	375,756	-	396,572	-	7,007	-	10,748,899	-
Total Blanket and Unplanned Projects	3,544,576	2,859,310	4,638,752	662,770	936,296	922,970	1,554,178	955,610	576,827	748,150	490,418	660,840	539,416	540,000	(1,600)	540,000	12,278,863	7,889,650
GRAND TOTAL	26,953,577	22,074,310	26,250,386	24,764,260	4,737,692	4,682,810	2,082,363	1,385,680	1,423,125	2,639,630	942,415	1,652,580	938,418	1,279,800	(164,601)	982,800	68,163,875	59,461,870	6%

Notes:

1. Amounts presented are at the plant level, of which Idaho Power is a 10 percent owner.
2. Actuals reported are directly from the operating partner, PGE, and reported at the plant level. Actual capital spend will not tie in total to Idaho Power's 10 percent ownership share because AFUDC accrual rates and overheads differ between the companies, and capital amounts recorded by Idaho Power incur a one-month lag, resulting in different in-service dates for the two partners.
3. Budget amounts are those presented by Idaho Power in the Boardman Annual Reviews (e.g. the 2013 budget amounts presented were included in the 2012 Boardman Annual Review, the 2014 budget amounts presented were included in the 2013 Boardman Annual Review, etc.).
4. Blanket projects were created as the plant was nearing its end-of-life when specific planned capital projects were no longer occurring. The blanket project identification is intended to capture capital issues that arise, typically equipment failures, at which time the plant will assign a new budget identification and work order for the capital investment. These new budget identifications and work orders likely appear in the Unplanned Projects section.

BOARDMAN PLANT ADDITIONS: Jun 1, 2012 - Jun 30, 2020

Project	Description	Total	Purpose	Project Description/Justification
27363452	BOARDMAN 1-1760 SO2 CONTROLS MODIFICATION BART	$ 2,778,967	Environmental	Through the BART rulemaking process, the Oregon Regional Haze State Implementation Plan ("RHSIP"), and per the Oregon DOE Quality Title V Operating permit and Acid Rain permit, SO2 emissions must be controlled and monitored. This project resulted in an addition of a dry sorbent injection system to control sulfur emissions from Boardman, as required by BART and the Oregon RHSIP.
27363448	BOARDMAN 1-1450 REPLACE VARIABLE SPEED DRIVES FOR ID FANS	$ 257,808	Reliability/Safety	This project replaced the variable speed drives (VSD) on two of Boardman's four ID fans. The fans are 3500 horsepower each and are used to control furnace draft. The fan failures were increasing in frequency and severity and parts were no longer replaceable due to age. The VSD allows the motor to run at a slower speed, providing significant energy efficiency and savings.
27394387	BOARDMAN 3-0517 COLD REHEAT PIPING REPLACEMENT	$ 211,129	Reliability	Boardman experienced a water hammer event in July 2013 that caused the 36-inch diameter cold reheat pipe supports to break and caused the piping to move creating structural damage. The cold reheat pipe, which is critical to plant operation, was replaced and realigned.
27300604	BOARDMAN 24806 EXPAND SHOP & WAREHOUSE	$ 210,344	Safety	The maintenance and weld shop expansion created an additional 4,300 square feet of working space for the Boardman maintenance crews. It allowed for large equipment overhauls including pulverizer rollers and condensate pumps to occur in the shop rather than in the overhaul location on the turbine deck and crane bay. When the turbine deck and crane bay were utilized for the work, it created communication issues, impeded emergency egress, and the welding activities set off smoke and fire alarms because of the inadequate ventilation. The expansion created a safer work environment and more efficient work space for the Boardman maintenance crews.
27300599	BOARDMAN 24796 INSTALL NEW FIRE DETECTION SYSTEM	$ 178,344	Safety	Installation of a new fire detection system including the upgrade of the fire protection sensors on the main transformers. In addition, it replaced all the fire detection panels in the plant, the operator interface and alarming system and the GSU transformer fire detection sensors. The new system also increased the expandability of the fire protection system to allow for future required upgrades. The old system was installed when the plant went commercial in 1980 and lacked several protective functions provided in modern systems.
27300598	BOARDMAN 24688 UPGRADE FIRE PROTECTION SYSTEM	$ 129,832	Safety	This project modified the plant and fire protection system to reduce the risk associated with a lubricating and control oil fire. It included the improvement of water spray protection over the hydrogen seal oil skid, lube oil skid, and main feedwater pumps, provided a perimeter line of sprinklers around the pedestal beneath the operating deck, and provided shielding and water spray over the lube oil/EHC interface valve at Bearing No. 1. Tests conducted prior to modification indicated the intensity and severity of oil-fed fires and that control of such fires depends on the sprinkler systems or other waterbased protection, as well as on containment of the escapting oil and drainage away to a safe location.
27398057	BOARDMAN 1-3348 REPLACE VARIABLE SPEED DRIVES FOR ID FANS - 2014	$ 86,390	Reliability/Safety	This project replaced the variable speed drives (VSD) on two of Boardman's four ID fans. The fans are 3500 horsepower each and are used to control furnace draft. The fan failures were increasing in frequency and severity and parts were no longer replaceable due to age. The VSD allows the motor to run at a slower speed, providing significant energy efficiency and savings.
27369029	BOARDMAN 26938 UPGRADE ASH HANDLING SYSTEM	$ 72,526	Reliability	The existing Boardman control system had been running the ash handling system for over 30 years and was the original plant equipment. The equipment had been discontinued by the manufacturer and spare parts on the market were limited. Because this system removes all the ash produced by the boiler and precipitator and stores it safely, it can be detrimental to plant operations if a failure occurs. This project upgraded the input/output, logic controllers and communication in the ash handling system.
27405561	BOARDMAN 1-3894 REPLACE CONTROL ROOM CHILLERS	$ 61,235	Reliability/Safety	The control room chillers were original equipment and at the end of their life. Replacement was needed to keep the control room at a reasonable temperature year round.
27405228	BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS	$ 54,838	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2014. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27328918	BOARDMAN 26256 INSTALL WATER RECOVERY FROM DEMINERALIZING SYSTEM	$ 50,676	Safety	This project installed a water recovery from the demineralizing system to recover the demineralized water used in polisher transfers. This allows for the recirculation of the water back into the denim water system, reducing the volume sent to the evaporation pond, resulting in reduced processing and chemical costs.
27387019	BOARDMAN 1-1486 ADD WATER TREATMENT AUTOMATION	$ 48,600	Safety	The water treatment system is made up of three sub-systems that had their own treatment phase where the water was conditioned, regenerated and prepared for another treatment. This project automated the three sub-systems allowing them to communicate flows and available storage tank volumes to each other, reducing plant water consumption and helping reduce water sent to the evaporation pond. It resulted in cost savings while also helps keep evaporation pond levels at a manageable level.
27403626	BOARDMAN 1-4035 PURCHASE PULVERIZER GEARBOX	$ 48,042	Safety	Two used gearboxes were purchased to facilitate the fabrication of one "like-new" spare gearbox to be placed in-service while maintenance was done on the existing gearboxes.
27452713	BOARDMAN 1-1549 2016 MISC PUMPS VALVES & MOTORS	$ 42,062	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2016. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27385087	BOARDMAN 1-2702 INSTALL SEWAGE LAGOON LINER	$ 40,869	Environmental	The Water Pollution Control Facilities ("WPCF") permit dictated that the onsite clay lined sewage lagoons would be evaluated and reconditioned as necessary to continue service for Boardman. At the time, two of the three sewage lagoons used clay liners that were visually evaluated and determined required reconditioning or relining per the WPCF permit and DEQ regulations. This project relined one of the two clay-lined ponds identified with a new synthetic liner system.
27361898	BOARDMAN 23260 2012 MISC PUMPS VALVES & MOTORS	$ 40,448	Reliability/Safety	This is a blanket project that covered failed pumps, valves, and motors at the plant in 2012. Each year the plant will have unexpected failures and replacement is necessary to maintain functionality, reliability, and safety of the plant.
27383255	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 13	$ 38,629		
27324968	BOARDMAN 26445 BOILER CLEANING SYSTEM UPGRADE	$ 37,455		
27421549	BOARDMAN 1-3979 UPGRADE CALCULATION ENGINE	$ 36,853		
27437109	BOARDMAN 1-5039 INSTALL VFD FOR DUMPER DRIVES	$ 35,791		
27324963	BOARDMAN 26307 INSTALL NEW PLUGGED COAL CHUTE DETECTORS	$ 35,506		
27405562	BOARDMAN 1-2366 INSTALL AGC EQUIPMENT	$ 33,148		
27362130	BOARDMAN 24795 REPLACE GAITRONICS PAGING	$ 32,491		
27396520	BOARDMAN 1-2788 CYBER SECURITY UPGRADES	$ 31,092		
27445809	BOARDMAN 1-5595 REPLACE COALYARD RAIL SECTIONS	$ 30,696		
27368150	BOARDMAN P35350 1-1896 INSTALL LED STACK LIGHTING	$ 30,454		
27510481	BOARDMAN 1-7194 GEN CIPV5 SECURITY IMPROVEMENTS	$ 29,192		
27478623	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 17	$ 28,430		
27428434	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 15	$ 28,124		
27369072	BOARDMAN 1- 2334 INSTALL REDUNDANT MECURY CEMS	$ 26,478		
27301397	BOARDMAN 25452 UPGRADE SWA BUILDING HVAC CHILLERS	$ 26,075		
27396521	BOARDMAN 1-3800 U1/U2 BELT REPLACEMENT	$ 25,327		
27362131	BOARDMAN 1-1415 REPLACE DUST SUPPRESSION SYSTEM	$ 24,755		

BOARDMAN PLANT ADDITIONS: Jun 1, 2012 - Jun 30, 2020

Project	Description	Total	Purpose	Project Description/Justification
27383257	BOARDMAN 1-1549 2013 MISC PUMPS VALVES & MOTORS	$ 23,230		
27361908	BOARDMAN 1-1839 REPLACE COAL YARD BELT	$ 22,971		
27405230	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	$ 22,655		
27413973	BOARDMAN 1-4177 UPGRADE STACK ELEVATOR CONTROLS	$ 20,272		
27428430	BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS	$ 18,813		
27504947	BOARDMAN 1-7757 REPLACE DAMAGED RAIL SECTIONS	$ 18,562		
27452714	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2016	$ 17,945		
27523659	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2019	$ 17,863		
27452711	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 16	$ 17,784		
27419412	BOARDMAN 1-4067 REPLACE R2 CONVEYOR BELT	$ 17,398		
27452741	BOARDMAN 1-5423 WELL & STORM WATER STRUCTURE	$ 16,656		
27428431	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	$ 16,540		
27435077	BOARDMAN 1-4973 REMODEL CONTROL ROOM	$ 16,480		
27491672	BOARDMAN 1-7364 FAILED DRY SORBENT INJECTION BLOWER REPLACEMENT	$ 16,332		
27392270	BOARDMAN 1-3194 REPLACE CONVEYOR BELT R-1	$ 16,104		
27343976	BOARDMAN 2010 GENERIC RETIREMENTS	$ 15,295		
27371159	BOARDMAN 1-2585 REPLACE COAL DUMPER CONDUIT	$ 14,592		
27387021	BOARDMAN 1-3336 INSTALL PRECIP ACOUSTIC HORNS	$ 14,282		
27372780	BOARDMAN 1-2867 INSTALL WASTEWATER FLOW METERS	$ 14,196		
27481039	BOARDMAN 1-6934 REPLACE COALYARD RAIL/TIES	$ 13,899		
27405232	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2014	$ 13,684		
27361896	BOARDMAN UNDISTRIBUTED WORK ORDER 2012	$ 13,390		
27383256	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2013	$ 13,179		
27383254	BOARDMAN 26899 1-1506 INSTALL PLATFORMS 13	$ 12,981		
27500625	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2018	$ 11,948		
27369026	BOARDMAN 1-2099 BN - INSTALL CARTY RESERVIOR FLOW METER	$ 11,116		
27500626	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2018	$ 10,934		
27478619	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 17	$ 10,571		
27383410	BOARDMAN 1-3200 REPLACE TPS DUAL SUPPRESSION SYSTEM	$ 10,516		
27385085	BOARDMAN 25503 INSTALL TRANSFORMER GAS MONITORING SYSTEM	$ 10,397		
27428429	BOARDMAN CONSTRUCTION OVERHEAD WORK ORDER 2015	$ 10,331		
27369028	BOARDMAN 1-2114 UPGRADE LUBE OIL PURIFIER CONTROL	$ 10,284		
27437108	BOARDMAN 1-5038 UPGRADE 250V STATION BATTERY	$ 9,950		
27383253	BOARDMAN 25146 26240 1-2769 DESKTOP COMPUTER VIN & GROWTH 13	$ 9,859		
27452715	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2016	$ 9,776		
27539444	BOARDMAN 1-9636 UPGRADE ELECTRIC BOILER CONTROLS	$ 9,244		
27361901	BOARDMAN 7-0582 MINOR TOOLS & EQUIPMENT 2012	$ 9,035		
27541909	BOARDMAN 1-9772 UPGRADE ID FAN VFD CHOKE COIL	$ 8,590		
27372782	BOARDMAN 1-2701 INSTALL TURB CRANE SAFETY IMPROVEMENTS	$ 8,228		
27314076	BOARDMAN 25924 REPLACE UPPER 30% BOILER REHEATER	$ 7,785		
27478620	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2017	$ 6,911		
27356952	BOARDMAN 1000001074 INSTALL CLIMB ASSIST IN STACK	$ 6,524		
27500623	BOARDMAN 1-1080 1-7070 PURCHASE RETIRE VEHICLES 18	$ 6,498		
27389116	BOARDMAN 1-3352 PURCHASE CONTROL INSTRUMENTS	$ 6,411		
27514779	BOARDMAN 1-7432 REPLACE CHECK VALVE FW1013	$ 6,287		
27451197	BOARDMAN 1-5699 INSTALL BELTING ON SR-2 BOOM	$ 6,201		
27471375	BOARDMAN 1-6131 INSTALL CYBER SECURITY NIDS	$ 6,033		
27432627	BOARDMAN 1-4979 INSTALL POWER/BLOC LOTO DEVICES	$ 5,539		
27481090	BOARDMAN 1-6758 UPGRADE BURNER MANAGEMENT FLAME AMP	$ 5,460		
27465262	BOARDMAN 1-6125 UPGRADE TOWER ROAD RXR CROSSING	$ 5,280		
27478667	BOARDMAN 1-6523 REPLACE COAL CONDUIT SECTIONS	$ 4,974		
27421548	BOARDMAN 1-4742 INSTALL VIDEO CONFERENCING	$ 4,768		
27478622	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2017	$ 4,563		
27383258	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2013	$ 4,393		
27383259	BOARDMAN 1-2019 S. SETTLING POND EROSION PREVENTION	$ 4,290		

Boardman - 2012 through 2019 Capital - Actuals vs. Budget
Plant Level - PGE 90%, IPC 10%

	2012		2013		2014		2015		2016		2017		2018		2019		Total		
Project Description	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**Budget**	**Actuals**	**IPC Budget**	**Variance**
BN - Misc. Pumps. Valves, Motors	414,198	315,000	233,324	433,850	546,326	303,750	187,975	430,070	420,324	300,000	284,101	300,000	109,126	324,000	(170,500)	324,000	2,024,876	2,730,670	-26%
P24688 - Boardman - Upgrade Fire Protection	898,442		112,606	212,340	518												1,011,566	212,340	376%
P24795 - BN-Replace Gaitronics Paging	305,790	500,000	5,379														311,169	500,000	-38%
P24806 - BN: Expand Maint & Weld Shops	2,112,086	1,500,000	(26,540)														2,085,547	1,500,000	39%
BN - Desktop Computer Fitness Program	1,478	50,000	98,194	91,380	3,188	88,810				45,600				64,800		10,800	102,860	351,390	-71%
P25452 - BN Replace Admin Bldg HVAC Chillers	7,113		243,297	292,100	5,431												255,840	292,100	-12%
P25499 - Gen Plants-Instl Transf Gas Mon			51,269	123,790	32,571	20,360	14,589		532		5,224						104,186	144,150	-28%
P25924 - Boardman - Replace Upper 30% Boiler	(1,066,899)																(1,066,899)	-	#DIV/0!
P26266 - BN-Install New Fire Detection Sys	1,107,588	700,000	558,573	743,860	18,324												1,684,486	1,443,860	17%
BART-Bdmn Air Quality Controls	18,696,034	15,000,000	17,145,877	18,441,780	952,353		4,653										36,798,917	33,441,780	10%
P26938 - Boardman - Upgrade Ash Handling Sys	183,729	130,000	306,250	326,020	234,279												724,258	456,020	59%
P27107 - Bdmn-Install Coal Dust Suppression	136,310	200,000															136,310	200,000	-32%
P27450 - Boardman - Decommissioning Estimate										208,540		179,730					-	388,270	-100%
BN: Vehicle Vintage Replacement	41,525	270,000	386,284	556,930	2,635	183,660	281,000		207,521	768,660	105,638	512,010	64,848	108,000	7,499	108,000	1,096,950	2,507,260	-56%
P35182 - BN - Replace VSDs for ID Fans	421,750	500,000	2,114,858	1,642,450	846,582	1,398,310											3,383,190	3,540,760	-4%
P35193 - BN-Add Water Treatment Automation			108,314	268,170	368,548	869,270											476,862	1,137,440	-58%
P35469 - BN - Replace Coal Dumper Conduit	149,856	50,000															149,856	50,000	200%
BN - Replace Coal Conduit Sections											49,118		41,217	81,000			90,335	81,000	12%
P35500 - BN: Install Sewage Lagoon Liner			11,815	621,220	762,831	895,680	10,697										785,342	1,516,900	-48%
P36108 - Bdmn-CCR Landfill Wells/SWStruct									165,352	568,680							165,352	568,680	-71%
BN: Replace Damaged Rail Sections													183,811	162,000			183,811	162,000	13%
BN - Generating Plants Cyber Security			262,133	347,600	27,809		29,272		52,569		7,917						379,699	347,600	9%
Total Projects	**23,409,001**	**19,215,000**	**21,611,634**	**24,101,490**	**3,801,395**	**3,759,840**	**528,186**	**430,070**	**846,298**	**1,891,480**	**451,997**	**991,740**	**399,002**	**739,800**	**(163,001)**	**442,800**	**50,884,512**	**51,572,220**	**-1%**
Blanket Projects																			
P35172 - PSES - Generation Fitness Fund		2,769,310		662,770		803,250		875,610		500,000		500,000		270,000		270,000	-	6,650,940	-100%
PCN094 - Boardman-Purchase Minor Tools & Equ	123,060	90,000	131,762		226,419	101,250	165,266	80,000	179,319	75,000	69,064	50,000	119,319	54,000	2,677	54,000	1,016,885	504,250	102%
P24067 - Boardman - Install Platforms	21,006		129,695											54,000		54,000	150,701	108,000	40%
P35974 - Boardman Business Plan														162,000		162,000	-	324,000	-100%
P35591 - As-Built Drawings - Generation	3,077		47,885		132,474	18,470	23,417		97,686	173,150	45,597	110,840	23,525		(11,284)		362,378	302,460	20%
Total Blanket Projects	**147,144**	**2,859,310**	**309,342**	**662,770**	**358,893**	**922,970**	**188,683**	**955,610**	**277,005**	**748,150**	**114,661**	**660,840**	**142,843**	**540,000**	**(8,607)**	**540,000**	**1,529,964**	**7,889,650**	
Unplanned Projects																			
P35210 - BN Capital Tools & Lab Equip	80,962																80,962	-	
P35350 - BN Install new LED lighting	304,537																304,537	-	
BN - Install Climb Assist in Stack	153,363																153,363	-	
BN - Replace SS 34.5kv cutouts	19,853																19,853	-	
BN - Replace Y1 Coal Yard Belt	919,352																919,352	-	
BN: S. Settling Pond Erosion Preven	42,899																42,899	-	
Boardman - coal chute detectors	592,604																592,604	-	
Boardman-Upgrade Precipitator Ctls	29,401																29,401	-	
P35387 - BN: Install Redundant Mercury CEMS	259,269		15,193														274,461	-	
P26256 - Boardman - Install Water Recovery f	600,709		1,027														601,735	-	
P35564 - BN - Install Wastewater Flow Meters	123,738		16,560														140,298	-	
P35162 - BN: Replace Dust Suppression Sys	140,183		202,489														342,671	-	
BN: Replace Flooring @ Coal Yard	7,738		18,087														25,824	-	
BN: Upgrade Lube Oil Purifier Cntrl	41,349		53,124														94,473	-	
BN-Install Turb Crane Safety Impv	71,985		9,374														81,359	-	
BN - Install Carty Res Flow Meter	9,492		92,160														101,652	-	
P35484 - 230kV Pole Replacements			87,844														87,844	-	
P35643 - BN Purchase New Air Compressor			12,500														12,500	-	
BN - Replace Conveyor Belt R-1			161,043														161,043	-	
BN: Install Precip Acoustic Horns			139,742														139,742	-	
P35783 - BN-Cold Reheat Piping Replacemnt			3,200,187		(1,133,664)												2,066,523	-	
BN: Bridge Crane Access Ladder			45		11,230												11,276	-	
BN: Enhance Physical Security			(189)		29,311												29,122	-	
P35987 - BN: Buy Pulverizer gearbox			30,000		64,000		238,828		125,239								458,067	-	
BN: Purchase Control Instruments			59,375		1,380								251				61,006	-	
BN: U1/U2 Belt Replacement			230,849				21,066										251,916	-	
P35787 - BN: Replace Control Room Chillers					608,405												608,405	-	
BN: Upgrade Stack Elevator Controls					201,932												201,932	-	
BN: Install AGC Equipment					273,765		24,326										298,090	-	
BN: Install Video Conferencing					43,486		4,138										47,624	-	
BN: Replace R2 Conveyor Belt					131,015		40,533										171,547	-	
P35807 - BN: Upgrade Calculational Engine					346,544		26,252		(6,340)								366,456	-	
P36140 - BN - Purchase Flat Bed Trailer							4,899										4,899	-	
BN: Remodel Control Room							163,972										163,972	-	
Install OH/UG Service SVPRM							997										997	-	
BN - Replace Coal Conduit Bends							11,141										11,141	-	
BOARDMAN-OPTIMIZE INTAKE WATER TEMP							217										217	-	
BN: Install Belting on SR-2 Boom							15,334		46,491								61,825	-	
BN: Install Power/Bloc LOTO devices							40,154		14,979								55,133	-	
P36004 - BN: Install VFD for Dumper Drives							352,814		3,339								356,153	-	
BN: Upgrade 250V Station Battery							95,646		1,400								97,046	-	
BN: Upgrade CEMS Data Controller							16,929		10,130								27,059	-	
P36143 - BN: Replace Coalyard Rail Sections							308,250		(3,805)		138,490						442,936	-	
BN: Replace Coal Gallery Belt R15B									6,130								6,130	-	

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BN: Upgrade Tower Rd RXR Crossing									105,657								105,657	-	
Virtual Servers for CEMS Monitoring									(3,400)								(3,400)	-	
BN: Upgrade Burner Mgmt Flame Amp											54,088						54,088	-	
BN - Failed DSI Blower Replacement											161,712						161,712	-	
BN: Replace S Gallery Belt 12A											21,467						21,467	-	
BN - Megawatt Meters for Backup													28,455		(40)		28,415	-	
P36445 - BN: Gen CIPv5 Security Improvements													305,200		7,047		312,247	-	
BN: Replace Check Valve FW1013													62,667				62,667	-	
Total Unplanned Projects	**3,397,433**	**-**	**4,329,410**	**-**	**577,404**	**-**	**1,365,495**	**-**	**299,822**	**-**	**375,756**	**-**	**396,572**	**-**	**7,007**	**-**	**10,748,899**	**-**	
Total Blanket and Unplanned Projects	**3,544,576**	**2,859,310**	**4,638,752**	**662,770**	**936,296**	**922,970**	**1,554,178**	**955,610**	**576,827**	**748,150**	**490,418**	**660,840**	**539,416**	**540,000**	**(1,600)**	**540,000**	**12,278,863**	**7,889,650**	
GRAND TOTAL	**26,953,577**	**22,074,310**	**26,250,386**	**24,764,260**	**4,737,692**	**4,682,810**	**2,082,363**	**1,385,680**	**1,423,125**	**2,639,630**	**942,415**	**1,652,580**	**938,418**	**1,279,800**	**(164,601)**	**982,800**	**63,163,375**	**59,461,870**	**6%**

Notes:

1. Amounts presented are at the plant level, of which Idaho Power is a 10 percent owner.
2. Actuals reported are directly from the operating partner, PGE, and reported at the plant level. Actual capital spend will not tie in total to Idaho Power's 10 percent ownership share because AFUDC accrual rates and overheads differ between the companies, and capital amounts recorded by Idaho Power incur a one-month lag, resulting in different in-service dates for the two partners.
3. Budget amounts are those presented by Idaho Power in the Boardman Annual Reviews (e.g. the 2013 budget amounts presented were included in the 2012 Boardman Annual Review, the 2014 budget amounts presented were included in the 2013 Boardman Annual Review, etc.).
4. Blanket projects were created as the plant was nearing its end-of-life when specific planned capital projects were no longer occurring. The blanket project identification is intended to capture capital issues that arise, typically equipment failures, at which time the plant will assign a new budget identification and work order for the capital investment. These new budget identifications and work orders likely appear in the Unplanned Projects section.