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UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

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

IDAHO POWER COMPANY

DIRECT TESTIMONY

OF

RYAN N. ADELMAN

- 1 Q. Please state your name and business address.
- 2 A. My name is Ryan Adelman. My business address
- 3 is 1221 West Idaho Street, Boise, Idaho 83702.
- 4 Q. By whom are you employed and in what capacity?
- 5 A. I am employed by Idaho Power Company ("Idaho
- 6 Power" or "Company") as the Vice President of Power Supply.
- 7 Q. Please describe your educational background.
- 8 A. I graduated in 1996 from the University of
- 9 Idaho, Moscow, Idaho, receiving a Bachelor of Science
- 10 Degree in Civil Engineering. I am a registered
- 11 professional engineer in the state of Idaho. In 2018, I
- 12 earned a Master of Business Administration Degree through
- 13 Boise State University's Executive MBA program. In 2019, I
- 14 completed the Energy Executive Course through the
- 15 University of Idaho.
- 16 Q. Please describe your work experience with
- 17 Idaho Power.
- 18 A. From 2004 to 2008, I was employed by Idaho
- 19 Power as an engineer in Power Production's Civil
- 20 Engineering Group. In 2008, I became an Engineering
- 21 Leader, initially responsible for the Langley Gulch power
- 22 plant project, and later for the Power Production Civil
- 23 Engineering Department. In 2015, I was promoted to Senior
- 24 Manager of the Projects Department where I managed the
- 25 Project Management and Cost and Controls group. In 2018, I

- 1 led the Company's Southeast Idaho area as a Regional
- 2 Manager. In 2019, I was promoted to Vice President of
- 3 Transmission and Distribution Engineering and Construction,
- 4 later renamed to Planning, Engineering and Construction. In
- 5 2020, I transitioned to my current position, Vice President
- 6 of Power Supply, where my responsibilities include
- 7 supervision over Idaho Power's jointly-owned coal assets,
- 8 load serving operations, and merchant activities.
- 9 Q. What is the purpose of your testimony in this
- 10 proceeding?
- 11 A. The purpose of my testimony is to describe the
- 12 Boardman power plant ("Boardman") investments made after
- 13 June 1, 2012, and the prudence of those investments.
- 14 Q. Have you prepared any exhibits detailing the
- 15 investments made since June 1, 2012?
- 16 A. Yes. Exhibit No. 3 details Idaho Power's
- 17 share of the investments made at Boardman between June 1,
- 18 2012, and June 30, 2020. Projects over \$40,000 include a
- 19 project description and investment purpose classification
- 20 for environmental compliance, the safe and economic
- 21 operation of the plant, or for reliability. Exhibit No. 4
- 22 presents the comparison of Boardman budgeted capital
- 23 investments and actual capital investments at the plant
- 24 level.

I. BACKGROUND

1

- Q. Please describe the time period for which
- 3 Idaho Power is requesting prudence of Boardman investments.
- A. In Case No. IPC-E-19-32, Idaho Power requested
- 5 a prudence determination on incremental Boardman
- 6 investments, or those investments made at the plant after
- 7 June 1, 2012, when the Boardman balancing account was
- 8 established. The Company's prudence request included
- 9 actual Boardman investments through December 31, 2018. The
- 10 Idaho Public Utilities Commission ("Commission") issued
- 11 Order No. 34519 in the case deferring a prudence
- 12 determination on the actual costs incurred since June 1,
- 13 2012, until a later filing to allow the Company additional
- 14 time to document the costs were prudently incurred. Idaho
- 15 Power's request for a prudence determination in this case
- 16 is for all Boardman-related investments made during the
- 17 June 1, 2012, through June 30, 2020, time period.
- 18 Q. Why is Idaho Power requesting a prudence
- 19 determination for investments made through June 30, 2020?
- 20 A. Cessation of Boardman coal-fired operations is
- 21 approaching and, as described in the testimony of Company
- 22 witness, Matthew T. Larkin, Idaho Power is proposing to
- 23 remove from customer rates the levelized revenue
- 24 requirement associated with all Boardman investments.
- 25 Therefore, a prudence determination on all actual Boardman

- 1 investments to-date is necessary.
- 2 II. CAPITAL BUDGET INVOLVEMENT
- 3 Q. As a 10 percent owner in the plant, is Idaho
- 4 Power involved in the decision-making process related to
- 5 capital investments?
- A. Yes. As the plant operator, Portland General
- 7 Electric ("PGE") manages the capital budget for Boardman.
- 8 However, the Company is and always has been actively
- 9 involved in the decision-making process in all matters
- 10 associated with Boardman capital investments. While PGE,
- 11 as the operator, vets and analyzes the need for specific
- 12 capital replacements as they arise to continue reliable and
- 13 safe operation of the plant, Idaho Power regularly
- 14 participates in discussions of the capital investment
- 15 forecast prepared by PGE, influencing the investments
- 16 ultimately made.
- 17 Q. Please describe the Company's participation in
- 18 the Boardman capital investment discussions.
- 19 A. There are two types of meetings in which
- 20 projected capital investments at Boardman are discussed:
- 21 Asset Management Plan ("AMP") meetings and Ownership
- 22 meetings.
- 23 AMP meetings generally occur on an annual basis and
- 24 are held with PGE and Idaho Power personnel, and Boardman
- 25 plant management and staff, to discuss upcoming capital

- 1 projects identified by PGE corporate and plant engineering
- 2 personnel. The intent of the meeting is for both Idaho
- 3 Power and PGE personnel to ask questions of the plant
- 4 personnel, most often the subject matter experts, any
- 5 details surrounding the forecasted capital investments
- 6 including the justification, timing and cost. The open
- 7 dialog between the partners and the plant personnel leads
- 8 to a refined, cost-effective forecasted capital spend.
- 9 The Ownership meetings, which occur annually at a
- 10 minimum, also may include discussions of capital projects,
- 11 both actual and upcoming, though the agendas often cover a
- 12 broad range of Boardman-related topics and may not always
- 13 discuss the forecasted projects in great detail.
- Q. As a minority owner, does Idaho Power have any
- 15 contractual rights to vote on items such as capital spend?
- 16 A. Yes. Under Section 3 of the Agreement for
- 17 Construction, Ownership and Operation of the Number One
- 18 Boardman Station on Carty Reservoir dated October 15, 1976,
- 19 as amended ("Boardman Agreement"), the Company may appoint
- 20 one member to the Operating Committee who has the right to
- 21 vote Idaho Power's ownership share on matters such as
- 22 capital additions budgets. If a matter is disapproved by
- 23 Idaho Power, the Company will notify the Operating
- 24 Committee of such item, stating the reason why and an
- 25 acceptable alternative. A Project Consultant is then

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

8 III. BOARDMAN INVESTMENTS SINCE 2012

- 9 Q. Have you identified the investments made at
- 10 Boardman during the June 1, 2012, through June 30, 2020,
- 11 time period?
- 12 A. Yes. Exhibit No. 3 presents Idaho Power's
- 13 share of the investments made at Boardman between June 1,
- 14 2012, and June 30, 2020. In addition, for those projects
- 15 over \$40,000, the Company has included a project
- 16 description and investment purpose classification as
- 17 environmental compliance, the safe and economic operation
- 18 of the plant, or reliability.

19 Environmental Compliance Investments

- 20 Q. What investments have been made for
- 21 environmental compliance since June 1, 2012?
- 22 A. There have been two investments made at
- 23 Boardman since June 1, 2012, that were for environmental
- 24 compliance: (1) SO2 controls modifications, and (2)
- 25 installation of a sewage lagoon liner. The first was a

- 1 known investment in emissions controls that was required
- 2 even after the Environmental Protection Agency ("EPA")
- 3 approved PGE's Boardman shut-down plan with coal-fired
- 4 operations to cease in 2020. Through the Best Available
- 5 Retrofit Technology ("BART") rulemaking process, the Oregon
- 6 Regional Haze State Implementation Plan ("Oregon RHSIP"),
- 7 and per the Oregon Department of Environmental Quality
- 8 ("DEQ") Title V Operating permit and Acid Rain permit, SO2
- 9 emissions must be controlled and monitored. The
- 10 investments included the addition of a dry sorbent
- 11 injection system to control sulfur emissions from Boardman,
- 12 as required by BART and the Oregon RHSIP. At the time, SO2
- 13 emissions were approximately 0.90 lb/MMBtu on a 30-boiler
- 14 operating day rolling average, well above the emissions
- 15 limit of 0.40 lb/MMBtu by July 1, 2014, and 0.30 lb/MMBtu
- 16 by July 1, 2018.
- Q. Was a dry sorbent injection system the only
- 18 option for controlling sulfur emissions?
- 19 A. No. Wet and dry scrubber systems are an
- 20 option, but they are more costly and could not be installed
- 21 in time to meet the July 1, 2014, deadline. With a lower
- 22 capital cost and shorter design and installation period,
- 23 the dry sorbent injection system was the investment
- 24 selected to comply with BART.
- 25 Q. What was the second project required for

- 1 environmental compliance?
- 2 A. The second environmental compliance
- 3 investment was the installation of a sewage lagoon liner as
- 4 a result of the Water Pollution Control Facilities ("WPCF")
- 5 permit. The permit dictated that the onsite clay-lined
- 6 sewage lagoons would be evaluated and reconditioned as
- 7 necessary to continue service for Boardman. At the time
- 8 the permit was issued, two of the three sewage lagoons used
- 9 clay liners that were visually evaluated and determined to
- 10 required reconditioning or relining per the WPCF permit and
- 11 Oregon DEQ regulations. This project relined one of the
- 12 two clay-lined ponds identified with a new synthetic liner
- 13 system.
- Q. Were any alternatives to the installation of a
- 15 synthetic liner system considered?
- 16 A. Yes. An alternative to the synthetic liner
- 17 system would have been the reconditioning of the existing
- 18 clay liner. This practice involves temporarily removing
- 19 the clay liner and re-grading the material to establish a
- 20 new impermeable layer. Depending on the conditions,
- 21 additional clay may be required to achieve regulatory
- 22 required permeability levels. Due to the level of testing
- 23 required to know for certain the reconditioning work
- 24 required, it is unknown what the cost of the reconditioned
- 25 clay liner would be. In addition, the Oregon DEQ

- 1 emphasizes the use of the synthetic liner for sewage
- 2 lagoons. And finally, the synthetic liner reduces ongoing
- 3 maintenance work required to mitigate vegetation growth
- 4 that damages clay liners.
- 5 Q. How much have the environmental compliance
- 6 investments contributed to the additions at Boardman since
- 7 June 1, 2012?
- A. At \$2.8 million, the SO2 controls
- 9 modifications were Idaho Power's largest investment at
- 10 Boardman since June 1, 2012. The sewage lagoon liner was
- 11 approximately \$41,000, for a total of \$2,819,836 in
- 12 environmental compliance investments.

13 Plant Operation Safety Investments

- 14 Q. How many of the identified projects were
- 15 associated with the safe and economic operation of the
- 16 plant?
- 17 A. There were six projects associated with the
- 18 safe and/or economic operation of the plant, three specific
- 19 to the safety of plant personnel, and three specific to the
- 20 economic operation of the plant.
- 21 Q. Please describe the projects specific to the
- 22 safety of plant personnel.
- A. The first was associated with an evaluation
- 24 that began in 2008 of the shop and warehouse space used by
- 25 the Boardman crews for maintenance and the storage of large

- 1 spare components on the turbine deck. With the new
- 2 environmental and emissions controls installation on the
- 3 horizon, it was determined the available work space in the
- 4 plant would become more limited as the area would fill with
- 5 more new components, requiring even more maintenance.
- 6 Inadequate shop and warehouse space carried a risk of
- 7 damaging spare parts due to contamination from maintenance
- 8 activities happening beside them while also leading to
- 9 inefficient work practices, potentially extending outages.
- 10 This safety investment, completed in 2013, totaled
- 11 approximately \$210,000.
- Q. What were the additional safety-related
- 13 investments?
- 14 A. The remaining safety investments were
- 15 associated with the combination of two projects, the
- 16 upgrade of the fire protection system and the installation
- 17 of a fire detection system, totaling approximately
- 18 \$300,000. The existing system was installed when the plant
- 19 went commercial in 1980 and lacked several protective
- 20 functions. The hardwired panel had push buttons and
- 21 indicating lights and was no longer able to show a new
- 22 alarm on the system if one already existed, decreasing the
- 23 operator's awareness of the status of the plant while also
- 24 requiring a series of manual actions. When evaluating the
- 25 system, it was also determined fire detection sensors on

- 1 the generator step-up transformers needed to be replaced
- 2 and connected to the fire detection system.
- Q. Why were the fire detection sensors
- 4 disconnected from the fire detection system?
- 5 A. The transformer deluge system was having
- 6 sensor failure problems and had been removed from the
- 7 automatic operation because it was causing the plant to
- 8 trip. This put the main transformer at an increased risk
- 9 if a fire were to occur while also potentially slowing the
- 10 response time to extinguish a fire. At the time of the
- 11 evaluation, it was determined the replacement cost for the
- 12 loss of the transformer alone was over \$3 million.
- Q. Did the evaluation of the fire protection and
- 14 fire detection systems identify any additional issues of
- 15 concern?
- 16 A. Yes. An oil fire risk assessment was
- 17 performed on all flammable lubricating and control oil
- 18 systems to identify potential release scenarios, sources of
- 19 large leaks, and determine the specific conditions
- 20 necessary that would permit the safe shutdown of lube oil,
- 21 seal oil and control oil systems. Because of the
- 22 complexity of piping systems, the assessment was the only
- 23 way to fully understand all potential leak points and
- 24 identify the potential for an oil-fed fire. The assessment
- 25 determined that not only did certain areas of the plant

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

4 Economic Plant Operation Investments

- 5 Q. What were the projects specific to the
- 6 economic operation of the plant?
- 7 A. There were three projects associated with the
- 8 economic operation of the plant: two involved the water
- 9 treatment system for Boardman, and the third was the
- 10 purchase of a pulverizer gear box.
- 11 Q. Please describe the water treatment system.
- 12 A. The water treatment system is composed of
- 13 three sub-systems: the polisher, the demineralizer, and the
- 14 raw water. Each sub-system is partially automated, but
- 15 they did not communicate with each other, posing logistic
- 16 challenges for maintenance upkeep.
- 17 Q. What is the importance of the water treatment
- 18 system?
- 19 A. Steam generators require very high purity
- 20 water to produce high purity steam to protect turbines from
- 21 deposition and corrosion affects. The water treatment
- 22 system has four interrelated functions that start with the
- 23 raw water system that filters and chlorinates water from
- 24 the Carty reservoir to make it suitable for
- 25 demineralization. The result is filtered water which is

- 1 used in the demineralization system where it is deionized
- 2 to make it suitable for condensate makeup to the boiler.
- 3 Once the water is demineralized, it is tested by the
- 4 laboratory to ensure it is suitable for makeup to the
- 5 condensate system. If the water passes testing, it is then
- 6 transferred to the condensate storage tank where it is
- 7 further demineralized by a condensate polisher system at
- 8 which point it is then ready for the steam generator.
- 9 Q. What work was done that resulted in additional
- 10 investments in the water treatment system?
- 11 A. The first project since June 1, 2012,
- 12 associated with the water treatment system for Boardman
- 13 automated the three sub-systems allowing them to
- 14 communicate flows and available storage tank volumes to
- 15 each other. Each of the three systems has its own
- 16 treatment phase, where the water is conditioned,
- 17 regenerated, and prepared for another treatment. This
- 18 cleaning process generates a waste product that must be
- 19 contained in the lined evaporation ponds while also
- 20 producing a high volume of rinse water suitable for reuse.
- 21 The reusable rinse water, between 1 1.5 million gallons
- 22 per month, is no longer sent to the evaporation pond now
- 23 that the three sub-systems communicate with each other,
- 24 reducing the evaporation rate of the ponds. In addition,
- 25 the investment reduced maintenance and capital inventory

- 1 requirements for the sub-systems.
- Q. What was the second project involving the
- 3 water treatment system?
- 4 A. The second investment was the installation of
- 5 water recovery from the demineralizing system. The
- 6 demineralizing system recovers over 250,000 gallons of
- 7 water each month in the process. Prior to the water
- 8 recovery installation, the used water went to the sump and
- 9 eventually the evaporation pond.
- 10 Q. How does the water recovery system benefit the
- 11 plant?
- 12 A. The project involved the installation of two
- 13 pumps with piping and valves to recover the demineralized
- 14 water used in polisher transfers. This allows for the
- 15 recirculation of the water back into the demineralizing
- 16 water system, reducing the volume sent to the evaporation
- 17 pond.
- 18 Q. Were any alternatives to the water treatment
- 19 system considered?
- 20 A. Yes. The plant could have continued to use
- 21 the existing system at higher maintenance costs, increasing
- 22 approximately 15 percent each year, until 2015, at which
- 23 time a mandatory upgrade would have been required. In
- 24 addition, in 2014, it was expected an additional lined
- 25 evaporation pond would become necessary too, at an

- 1 estimated cost of \$500,000. In addition, because the water
- 2 has already had its organic constituents removed,
- 3 processing and chemical costs were reduced. The investment
- 4 in the water recovery system was the lowest cost
- 5 alternative. The Company's share of the investment costs
- 6 of the two water treatment system projects was
- 7 approximately \$100,000.
- 8 Q. What was the third project specific to the
- 9 economic operation of the plant?
- 10 A. The final project associated with the economic
- 11 operation of the plant, at a cost of approximately \$48,000
- 12 to Idaho Power, involved the purchase of two used
- 13 pulverizer gear boxes to facilitate the fabrication of a
- 14 single like-new spare gearbox. This gearbox was then
- 15 placed into service to allow for maintenance on the aging
- 16 gearboxes that were in service at the time. In total,
- 17 \$665,838 has been spent on the safe and economic operation
- 18 of the plant since June 1, 2012.

19 Plant Reliability Investments

- Q. How many of the projects identified were
- 21 associated with reliability?
- A. Two of the 16 projects over \$40,000 were
- 23 investments in reliability and an additional six projects
- 24 were a combination of reliability and safety investments.
- 25 The largest single investment made since June 1, 2012, was

- 1 the result of a water hammer, or hydraulic shock, event in
- 2 July 2013. The event caused the cold reheat pipe supports
- 3 to break, dropping the piping and creating structural
- 4 damage. Boardman went into a forced outage, eliminating
- 5 the immediate safety hazard, so that the cold reheat pipe
- 6 could be replaced and realigned. The plant was insured for
- 7 an event of such magnitude and insurance proceeds helped
- 8 reduce Idaho Power's share of this project to a cost of
- 9 approximately \$200,000. The next required reliability
- 10 investment was associated with the upgrade of the control
- 11 system of the ash handling system.
- 12 Q. What is an ash handling system?
- 13 A. The ash handling system transfers coal ash,
- 14 the residual from burning coal that includes solid
- 15 materials, away from boilers for disposal. Regulations are
- 16 in place for the safe and efficient transfer and the
- 17 systems vary for the different coal ash residuals. The
- 18 Boardman ash handling system controls three systems: the
- 19 fly ash handling system, the bottom ash handling system,
- 20 and the economizer ash handling system.
- 21 The existing Boardman control system had been
- 22 running the ash handling system for over 30 years, and was
- 23 the original plant equipment. The equipment had been
- 24 discontinued by the manufacturer and spare parts on the
- 25 market were limited. Because this system removes all the

- 1 ash produced by the boiler and precipitator and stores it
- 2 safely, it can be detrimental to plant operations if a
- 3 failure occurs. This project upgraded the input/output,
- 4 logic controllers and communication in the ash handling
- 5 system.
- 6 Q. Please describe the projects that were a
- 7 combination of reliability and safety investments.
- A. The projects that were a combination of
- 9 reliability and safety investments involved the replacement
- 10 of variable speed drives and control room chillers and the
- 11 purchase of miscellaneous pumps, valves, and motors. The
- 12 largest of the investments was the replacement of variable
- 13 speed drives. Boardman's four induced draft fans, which
- 14 are 3,500 horse power each, have variable speed drives to
- 15 control furnace draft, allowing the motor to run at a
- 16 slower speed, increasing energy efficiency. The existing
- 17 variable speed drives were aging and becoming increasingly
- 18 unreliable. In addition, spare parts were no longer
- 19 available from the manufacturer. Within six months, the
- 20 plant experienced two separate failures of the variable
- 21 speed drives, reducing Boardman's capability while also
- 22 creating a safety hazard. As a result, two of the four
- 23 variable speed drives were replaced in 2013, and the
- 24 remaining two in 2014, for a total reliability and safety
- 25 investment of approximately \$340,000.

- 1 Q. Were any alternatives to the variable speed
- 2 drives considered?
- A. Yes, it is possible to run the fans without
- 4 the variable speed drives however, an energy efficiency
- 5 savings resulting from the variable speed drive would be
- 6 lost and the cost to reconfigure the fans was estimated to
- 7 be approximately \$200,000.
- 8 Q. What was the purpose for the replacement of
- 9 the control room chillers?
- 10 A. In 2013, the chillers that provide cooling for
- 11 the control room and the cable spreading room tripped. The
- 12 chillers were old and mechanical parts were no longer
- 13 available. The plant personnel were keeping the chillers
- 14 operating on maintenance creativity for several years,
- 15 cobbling together parts. There was concern if they tripped
- 16 again, they would no longer be repairable. In addition,
- 17 the chillers were using a refrigerant that is no longer
- 18 made in the United States, making it more difficult and
- 19 costly to obtain.
- Q. What happens if the chillers are not in
- 21 working order?
- 22 A. If the chillers failed, the control room would
- 23 be unhabitable in the hotter months, creating a safety
- 24 issue for plant personnel. In the cable spreading room,
- 25 which must be kept below certain temperatures, a chiller

- 1 failure could cause the plant to trip due to the loss of
- 2 the distributed control system, creating a reliability
- 3 issue. The control room chiller replacement was \$61,235.
- 4 Q. Were there any other investments associated
- 5 with a combination of reliability and safety?
- 6 A. Yes. In 2012, 2014, and 2016, the Company
- 7 invested \$40,448, \$42,062, and \$54,838, respectively, in
- 8 miscellaneous pumps, valves and motors, necessary to
- 9 maintain functionality, reliability and the safety of the
- 10 plant. The projects are referred to as blanket projects
- 11 and are intended to capture unexpected failures at the
- 12 plant.
- Q. Why are they referred to as blanket projects?
- 14 A. Blanket projects were created as the plant was
- 15 nearing its end-of-life when specific capital projects were
- 16 no longer occurring as often and, therefore, forecasted
- 17 spend was minimal. The blanket project identification is
- 18 intended to capture capital issues that arise, typically
- 19 equipment failures, at which time the plant will assign a
- 20 new budget identification and work order for the capital
- 21 investment. With these three blanket projects, the total
- 22 investment in projects associated with a combination of
- 23 reliability and safety investments was \$542,782.

24 Forecast to Actual Investment Comparison

Q. You indicated Exhibit No. 4 presents a

- 1 comparison of Boardman budgeted capital investments and
- 2 actual capital investments. What is the purpose of the
- 3 comparison of forecast and actual investments?
- 4 A. In Case No. IPC-E-19-32, in their prudence
- 5 review, Commission Staff requested a comparison of the
- 6 actual investments by project as detailed in the Company's
- 7 records with the budgeted investments included as part of
- 8 PGE's forecast for Boardman. The information was not
- 9 readily available for Staff's review because of
- 10 difficulties compiling the data and, therefore, there was
- 11 insufficient time to review this detail in that case.
- 12 Q. Why was it difficult to prepare the
- 13 comparison?
- A. As part of the Boardman Annual Reviews filed
- with the Commission pursuant to Order Nos. 32457 and 32549,
- 16 the Company presented the capital budget by project for
- 17 Boardman over its remaining life, as prepared by PGE. The
- 18 results of this budget were used to estimate the levelized
- 19 revenue requirement associated with incremental investments
- 20 made after June 1, 2012. Each year, Idaho Power updated the
- 21 incremental investments to include actuals through year-end
- 22 and revised forecasted investments for the remaining life
- 23 of Boardman using the latest budget from the plant.
- 24 Forecast information from PGE was utilized because it
- 25 reflected the most accurate and readily-available

- 1 information at the time the Boardman Annual Reviews were
- 2 prepared.
- 3 However, because the budget information was prepared
- 4 by PGE, both the Allowance for Funds Used During
- 5 Construction and overhead rates differ from Idaho Power's,
- 6 and the timing at which the costs are incurred varied as
- 7 Idaho Power records the investment when billed, or with a
- 8 one-month lag, resulting in differing in-service dates of
- 9 the projects between the partners. As a result, comparing
- 10 actual project spend recorded by the Company to forecasted
- 11 project spend provided in the Boardman Annual Reviews did
- 12 not result in a consistent comparison from which budget-to-
- 13 actuals variances could be determined on a project-by-
- 14 project basis.
- To remedy this issue and assist in Commission
- 16 Staff's review, Idaho Power requested from PGE the total
- 17 plant level actual capital addition spend by project for
- 18 the 2012 through 2019 time period. The Company added to
- 19 this data the capital budget by project as previously
- 20 reported in the Boardman Annual Reviews and computed the
- 21 variance between the two. The detail is presented in
- 22 Exhibit No. 4.
- Q. You indicated Idaho Power updated the budget
- 24 in the Boardman Annual Review filings with the most recent
- 25 capital forecast from the plant. What budget amounts is the

- 1 Company presenting in Exhibit No. 4?
- 2 A. Exhibit No. 4 presents the budget contained in
- 3 the Boardman Annual Review from the prior year, e.g. the
- 4 2014 budget amounts presented were included in the 2013
- 5 Boardman Annual Review as the forecast of investments for
- 6 2014.
- 7 Q. Were there any other complexities with
- 8 preparing the comparison?
- 9 A. Yes. Another complexity is associated with
- 10 the difficulty forecasting capital additions at a plant
- 11 nearing its end-of-life. Because the plant reduced capital
- 12 spend to include only that required for environmental
- 13 compliance or to maintain reliability or safety for only
- 14 eight more years, the budget often did not identify
- 15 specific capital projects. As a result, Idaho Power has
- 16 separated the actual to budget comparison in three
- 17 categories within Exhibit No. 4: (1) planned projects, (2)
- 18 blanket projects, and (3) unplanned projects.
- 19 O. Please describe the categories for which the
- 20 Company has presented the project level detail.
- 21 A. Planned projects are those projects for which
- 22 the plant anticipated and budgeted. Blanket projects, as I
- 23 described earlier in my testimony, were created as the
- 24 plant was nearing its end-of-life when specific capital
- 25 projects were no longer occurring as often. The blanket

- 1 project identification is intended to capture capital
- 2 issues that arise, typically equipment failures, at which
- 3 time the plant will assign a new budget identification and
- 4 work order for the capital investment. These new budget
- 5 identifications and work orders appear in the unplanned
- 6 projects section of Exhibit No. 4.
- 7 Q. How do the actuals compare to the budget of
- 8 the planned projects?
- 9 A. In total, the actual costs of the planned
- 10 projects are one percent lower than the budgeted costs for
- 11 the same planned projects. Of all projects combined,
- 12 actual costs were six percent higher than budgeted.
- 13 However, because of the complexities I discussed, this
- 14 budget comparison simply reflects the variance between the
- 15 plant's forecast for the following year and what actually
- 16 occurred; it is not a comparison to amounts the Company is
- 17 currently recovering in rates. Therefore, it is also
- 18 important to review the Idaho Power-specific actual to
- 19 forecast comparison included in the Boardman levelized
- 20 revenue requirement computation, as discussed in Mr.
- 21 Larkin's testimony.
- Q. Why is the Idaho Power-specific actual to
- 23 forecast comparison included in the Boardman levelized
- 24 revenue requirement computation valuable?
- A. At the time the Boardman balancing account was

- 1 established, the levelized revenue requirement associated
- 2 with incremental investments included forecasted capital
- 3 additions of approximately \$8.01 million. As shown in
- 4 Exhibit No. 1 to Mr. Larkin's testimony, the most recent
- 5 levelized revenue requirement computation includes only
- 6 \$4.99 million of investments made at Boardman since June 1,
- 7 2012. The Company has discussed the comparison of actual
- 8 investments to forecasted investments in each of its Annual
- 9 Reports noting that since establishment, in only one year
- 10 has the actual level of investments exceeded that
- 11 forecasted when the balancing account commenced and it was
- 12 simply due the timing of the project completion, as the
- 13 project did not close to Idaho Power's records prior to
- 14 year-end.
- 15 Q. Please summarize your testimony.
- 16 A. Idaho Power has been required to make
- 17 investments at Boardman during the June 1, 2012, through
- 18 June 30, 2020, time period, and has been actively involved
- 19 in the capital spend decision making process at the plant.
- 20 Of the 16 projects identified in which Idaho Power's share
- 21 of the investments was more than \$40,000, two projects
- 22 totaling \$2,819,836 were for environmental compliance, six
- 23 totaling \$665,838 were for the safe and economic operation
- 24 of the plant, two totaling \$283,655 were for reliability
- 25 purposes, and six totaling \$542,782 were for a combination

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of reliability and safety. All investments addressed in
 1
 2
    this filing were prudent and in the public interest.
 3
                  Does this conclude your testimony?
            Q.
 4
            Α.
                  Yes.
 5
 6
 7
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12
13
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1	DECLARATION OF RYAN N. ADELMAN
2	I, Ryan N. Adelman, declare under penalty of perjury
3	under the laws of the state of Idaho:
4	1. My name is Ryan N. Adelman. I am employed
5	by Idaho Power Company as the Vice President of Power
6	Supply.
7	2. On behalf of Idaho Power, I present this
8	pre-filed direct testimony and Exhibit Nos. 3-4 in this
9	matter.
10	3. To the best of my knowledge, my pre-filed
11	direct testimony and exhibits are true and accurate.
12	I hereby declare that the above statement is true to
13	the best of my knowledge and belief, and that I understand
14	it is made for use as evidence before the Idaho Public
15	Utilities Commission and is subject to penalty for perjury.
16	SIGNED this 21st day of August 2020, at Boise, Idaho.
17	
18	Signed:
19	

·	DECLARATION OF RYAN N. ADELMAN
2	I, Ryan N. Adelman, declare under penalty of perjury
3	under the laws of the state of Idaho:
4	1. My name is Ryan N. Adelman. I am employed
5	by Idaho Power Company as the Vice President of Power
6	Supply.
7	2. On behalf of Idaho Power, I present this
8	pre-filed direct testimony and Exhibit Nos. 3-4 in this
9	matter.
10	To the best of my knowledge, my pre-filed
11	direct testimony and exhibits are true and accurate.
12	I hereby declare that the above statement is true to
13	the best of my knowledge and belief, and that ${\ensuremath{\texttt{I}}}$ understand
14	it is made for use as evidence before the Idaho Public
15	Utilities Commission and is subject to penalty for perjury.
16	SIGNED this 21st day of August 2020, at Boise, Idaho.
17	
18	Signed:
19	Rys A. Adl
	"Kys!"

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	Director	
GOADDMAN 1-2766 SOLCONTROLS MODIFICATION BATT \$ 277,897 Environmental			10181	rupose	Project Description/Justification
ECANDIAMA 1-2150 REPLACT VARIALE PRED DANES FOR DETAILS ECANDIAMA 1-2150 REPLACT VARIALE PRED DANES FOR DETAILS ECANDIAMA 1-2150 REPLACT VARIALE PRED DANES FOR DETAILS ECANDIAMA 1-2150 REPLACE VARIATE REPROSE FOR DANES FOR DETAILS ECANDIAMA 1-2150 REPLACE VARIATE REPROSE FOR DANES FOR DETAILS ECANDIAMA 1-2150 REPLACE VARIATE REPROSE FOR DANES FOR DETAILS ECANDIAMA 1-2150 REPLACE FOUNDS FOUNDS FOR DETAILS ECANDIAMA 1-2150 REPLACE FOUNDS FOR DETAILS ECANDIAMA 1-2150 REPLACE FOUNDS FOR DETAILS ECANDIAMA 1-2150 REPLACE FOUND	27363452	BOARDMAN 1-1760 SOZ CONTROLS MODIFICATION BART		Frvironmental	indulgine basis futeriashing process, the Oregon Regional Haze State implementation Plan ("PHSIP"), and per the Oregon DOE Quality Title V Operating permit and Acid Rain permit, 502 emissions must be controlled and monitored. This project resulted in an addition of a dry sorbent injection system to
SOANDAMA 1-5160 FEMACE VARIABLE SPEED DRIVES FOR D TARS - 2014 5 271,299 Reisiability/Sifety			l	Envioumental	Lobitol suffur emissions from Boardman, as required by BARK and the Oregon RHSSP. The receipt sealed date that the Arman
BOARDMAN 3-0517 COLD RESEAT FENER SETACEMENT \$ 711.129 Relability	27363448	BOARDMAN 1-1450 REPLACE VARIABLE SPEED DRIVES FOR ID FANS		Rollshillm/Cafee	Inis project replaced the variable speed offwes (VSD) on two of Boardman's four ID fans. The fans are 3500 horsepower each and are used to control trace draft. The fan failures were increasing in frequency and severify and parts were no longer replaceable due to age. The VSD allows the motor to run trace.
BOARDMAN 24596 INSTALL NEW FIRE DITECTION SYSTEM \$ 710.344 SAFRY	7004007				as a sower speed, proving symmetricant energy enricency and savings. Boardman experienced a water harmer event in July 2013 that caused the 36-inch diameter cold reheat pipe supports to break and caused the piping to
BOARDMAN 34595 NDTALL NEW FIRE DITICTION SYSTEM \$ 178.344 STIFEY	1324301	BOARDMAN 5-0517 COLD REHEAT PIPING REPLACEMENT		Reliability	move creating structural damage. The cold reheat pipe, which is critical to plant operation, was replaced and realigned.
BOARDMAN 24596 INSTALL NEW FIRE DETECTION SYSTEM \$ 178,344 STREET BOARDMAN 24586 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 SAFETY BOARDMAN 24586 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 SAFETY BOARDMAN 24586 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 SAFETY BOARDMAN 24586 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 Reliability/Safety BOARDMAN 24586 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 Reliability/Safety BOARDMAN 24589 UFGADE FIRE PROTECTION SYSTEM \$ 129,832 Reliability/Safety BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 46,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 46,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 46,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE TREATMENT AUTOMATION \$ 120,007 SAFETY BOARDMAN 24589 UFGADE FIRE STREET STREET STREET SAFETY BOARDMAN 2559 UFGADE FIRE STREET STREET STREET STREET SAFETY BOARDMAN 2559 UFGADE FIRE STREET STREET STREET SAFETY BOARDMAN 2559 UFGADE FIRE STREET STREET STREET STREET SAFETY BOARDMAN 2559 UFGADE FIRE STREET S	7300604	BOARDMAN 24806 EXPAND SHOP & WAREHOUSE		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 overhaus including pulvertize rollers and condensate pumps to occur in the shop rather than in the overhaul location on 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.
BOARDMAN 24588 UPGADGE FIRE PROTECTON SYTEM \$ 129.837 SAFETY	95300EZZ	ROARDMAN 24796 INSTALL NEW GIBE DETECTION SYSTEM			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.
BOARDMAN 1-3346 REPLACE VARIABLE SPEED DRIVES FOR ID FANS - 2014 \$ 86,390 Reliability/Safety	7300598	BOADHAAN 7458R IPICAADE FIRE PROTECTION KWETSA		201517	and aced several protective fundrions provided in moden systems. In project modified the plant and files 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 man feedwater purmps, provided a perimeter line of sprinklers around the pedestal beneath the operating deck, and provided shielding and water spray over the lube oil/FHC 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
BOARDMAN 1-3894 REPLACE CONTROL ROOM CHILERS 5 72.556 Reliability/Safety	7398057	BOARDMAN 1-3348 REPLACE VARIABLE SPEED DRIVES FOR 1D FANS - 2014		Salety Reliability/Safety	procedur, as well as on containment of the exporting of and dramage away to a safe location. Project replaced the variable speed drives (VSD) on two Obardman'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.
BOARDMAN 1-3549 2014 MISC PUMPS VALVES & MOTORS \$ 54,838 Reliability/Safety	27369029	BOARDMAN 26938 UPGRADE ASH HANDLING SYSTEM		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 apprecipator 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 handline section.
BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS \$ 54,838 Reliability/Safety	27405561	BOARDMAN 1-3894 REPLACE CONTROL ROOM CHILLERS		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.
BOARDMAN 26256 INSTALL WATER RECOVERY FROM DEMINERALIZING SYSTEM S 9,676 Safety	17405228	BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS		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 necessar to maintain functionality, reliability, and safery of the plant
BOARDMAN 1-1486 ADD WATER TREATMENT AUTOMATION \$ 48,600 Safety	7328918	BOARDMAN 26.356 INSTALL WATER RECOVERY FROM DEMINERALIZING SYSTEM		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.
BOARDMAN 1-1549 PURCHASE PULVERIZER GEARBOX S 42,042 Safety	7387019	BOARDMAN 1-1486 ADD WATER TREATMENT AUTOMATION		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. It resulted in cost savings while also helps keep evaporation pond evels a manageable level.
BOARDMAN 1-1549 2016 MISC PLMPS VALVES & MOTORS \$ 40,869 Environmental 1	7403626	BOARDMAN 1-4035 PURCHASE PULVERIZER GEARBOX		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.
BOARDMAN 1-2702 INSTALL SEWAGE LAGOON LINER \$ 40,869 Environmental	7452713	BOARDMAN 1-1549 2016 MISC PUMPS VALVES & MOTORS		Reliability/Safety	This is a bianket 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.
BOARDMAN 1-3280 7012 MISC PUMPS VALVES & MOTORS \$ 40,448 Reliability/Safety	27385087	BOARDMAN 1-2702, INSTALL SEWAGE LAGOON LINER		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 day lines 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.
BOARDMAN 1-2004 - 7-20 TORLATAS BOARDMAN 2-5458 BOILER CLEANING SYSTEM UPREADE BOARDMAN 1-2479 UPGRADE CALCULINOR REGINE BOARDMAN 1-2479 UPGRADE CALCULINOR REGINE BOARDMAN 1-2479 UPGRADE CALCULINOR REGINE BOARDMAN 1-2566 WSTALL WE DECED CALCULINE EFFECTORS BOARDMAN 1-2566 WSTALL AGC EQUIPMENT BOARDMAN 1-2566 WSTALL AGC EQUIPMENT BOARDMAN 1-2566 WSTALL AGC EQUIPMENT BOARDMAN 1-2566 WSTALL ED STACK UGFING BOARDMAN 1-2566 WSTALL ED STACK UGFING BOARDMAN 1-2569 WSTALL RED WITS VALUES & MOTORS 17 BOARDMAN 1-2569 WSTALL RED WITS VALUES & MOTORS 17 BOARDMAN 1-2549 WSTALL RED WITS VALUE SET WE VEHICLES 1.5 BOARDMAN 1-2549 WSTALL RED WITS VALUES & MOTORS 17 BOARDMAN 1-2540 WSTALL RED WITS VALUES & MOTORS 17 BOARDMAN 1-2550 WSTALL RED WITS VALUES & MOTORS 18 BOARDMAN 1-2550 WSTALL RED WITS WSTALL RED WSTALL R	7361898	BOARDMAN 22260 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.
SOURDMAN 1.3959 UPGADE CANADOM	7304058	BOARDMAN 25445 DOILED OF CHING CUTTER UNDER 13	38,629		
BOARDMAN 1-5639 INSTALL VFD FOR DUMPER DRIVES 5	7421549	BOARDMAN 1-3979 UPGRADE CALCULATION ENGINE	36.455		
BOARDMAN 1-3280 MSTALL NEW PLIGEDE DOLI CHUTE DETECTORS BOARDMAN 1-3266 INSTALL AGC EQUIPMENT BOARDMAN 1-3266 INSTALL AGC EQUIPMENT BOARDMAN 1-3266 INSTALL AGC EQUIPMENT BOARDMAN 1-3286 CHEB SECURITY URFALES BOARDMAN 1-3286 CHEB SECURITY URFALES BOARDMAN 1-3286 CHEB SECURITY URFALES BOARDMAN 1-3286 INSTALL BD STACK LIGHTING BOARDMAN 1-3284 INSTALL REDINDANT MELLIN CENS BOARDMAN 1-3284 INSTALL REDINDANT MELLIN CENS BOARDMAN 1-3284 INSTALL REDINDANT MELLIN CENS BOARDMAN 1-3415 SEPLACE DATS SEVERIES BOARDMAN 1-3415 SEPLACE DATS SEVERIES SE MOTORS BOARDMAN 1-3415 SEPLACE DATS SEVERIES SE MOTORS BOARDMAN 1-3415 SEPLACE DATS SEVERIES SE	7437109	BOARDMAN 1-5039 INSTALL VFD FOR DUMPER DRIVES			
BOARDMAN 1-2356 INSTALL AGE CEUTIONINTENT \$	7324963	BOARDMAN 26307 INSTALL NEW PLUGGED COAL CHUTE DETECTORS			
BOARDMAN 1,278E CPRES SCURITY UPGRADES S	7362130	BOARDMAN 1-2366 INSTALL AGC EQUIPMENT BOARDMAN 24795 REPLACE GALTRONICS PAGING			
BOARDMAN 1559S FEMACE COLIVARD BALL SECTIONS	7396520	BOARDMAN 1-2788 CYBER SECURITY UPGRADES			
BOARDMAN 1-21540 LIBERTALLICE TO A CARACHERINE S A CARACHERINE CHICLES IS S A CARACHERINE CHICLES IS S A CARACHERINE CHICLES IS S A CARACHERIS S A CARACHERIS CHICLES IS S A CARACHERIS CHICLES IS S A CARACHERIS CHICLES IS S A CARACHERIS CHICLES CHICLES S A CARACHERIS CHICLES CHICLES S A CARACHERIS CHICLES S A CARACHERIS CHICLES CHICLES S A CARACHERIS CHICLES	7445809	BOARDMAN 1-5595 REPLACE COALYARD RAIL SECTIONS			
BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 17 5	7510481	BOARDMAN 1-7194 GEN CIPVS SECURITY IMPROVEMENTS			
BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 15 S	7478623	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 17			
SOMEWARD 2-23-113-112-112-112-112-112-112-112-112	7428434	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 15			
BOARDMAN 1-3800 UJ/U2 BELY REPLACEMENT \$	7301397	BOARDMAN 25452 UPGRADE SWA BUILDING HVAC CHILLERS	5 26.075		
BOARDMAN 1-1549 REPLACE OAL VAPO BELT	7396521	BOARDMAN 1-3800 U1/U2 BELT REPLACEMENT	728,25 \$		
BOARDMAN 1-15549 2013 MISC PUMPS VALVES & MOTORS BOARDMAN 1-1839 REPLACE COAL YARD BELT	7362131	BOARDMAN 1-1415 REPLACE DUST SUPPRESSION SYSTEM	\$ 24,755		
PARTICULAR DESCRIPTION OF THE PARTIC	7361908	BOARDMAN 1-1839 REPLACE COAL YARD BELT	\$ 23,230		

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			
27504947	BOARDMAN 1-7757 REPLACE DAMAGED RAIL SECTIONS	\$ 18.562		
27452714	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2016			
27523659	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2019			
27452711	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 16	5 17,784		
27419412	BOARDMAN 1-4067 REPLACE R2 CONVEYOR BELT	5 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	5 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	5 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		
2/385085	BOARDMAN 25503 INSTALL TRANSFORMER GAS MONITORING SYSTEM	5 10.397		
27428429	BOARDMAN CONSTRUCTION OVERHEAD WORK ORDER 2015	\$ 10.331		
27369028	BOARDMAN 1-2114 UPGRADE LUBE OIL PURIFIER CONTROL			
27437108	BOARDMAN 1-5038 UPGRADE 250V STATION BATTERY			
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			
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	5 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			
27389116	BOARDMAN 1-3352 PURCHASE CONTROL INSTRUMENTS			
27514779	BOARDMAN 1-7432 REPLACE CHECK VALVE FW1013			
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/BLOCLOTO DEVICES	\$ 5,539		
27481090	BOARDMAN 1-675B 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	5 4,393		
27383259	BOARDMAN 1-2019 S. SETTLING POND EROSION PREVENTION	5 4.290		

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION CASE NO. IPC-E-20-32

IDAHO POWER COMPANY

ADELMAN, DI TESTIMONY EXHIBIT NO. 4

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420,324			-	533			1	+		207.521					165,352		52,569		-	179,319			277.005		-						-						+		-					1	125,290				1	+		16 2.mm				1	10.100	46.472	3 336	1,400	10130	10,1%	
430,070	+	+				1	1	1		-							430,070		875.610	80,000			955.610		-	-					+		-			1	1		-				+	1	1				+	+	+	-	-			1		1	-	-		1	
187,975		-		14,589			4,653	+	1	281,000				200	1000		528,186			165,766			188.683							1	+						1		-						238.828		21,066			24,326	40.539	26.252	6887	163,972	266	11,141	21.7	2016	152.814	95.646	16 979	10.372	
303,750	1	68.810		20,360				-		183,660	1,398,310	669,270		000 000			3,759,840		803.250	101,250			922.970		-				1	+							1		-				+		-		1		+			-			-	+	-	1				1	
X6,326 S18		3.150	5.431	32,571		18,824	507.303	6000			546,582 1			253 624			3,801,395 3,		-	226,419	٠.		358,893		-	-				+			1				+	+					33 664)	317.50	64,000	1,380		08,405	01.932	43 486	21 015	46.544			+	+	1	ł	l			-	
212,340		93.380	92.100	23,790			1	1		556,930				200 300		-	24,101,490 3,1		662,770			1	662,770		-	-				+				1		1	-	-					3		-			a)		-				-	-	+	1	-					
	3,379		243,297					1		386.284 5				21 816					L		569	***		-	-					1	-	15.193	1.027	16,560	681	287	221	92.160	244	005	243	742	187	100	30,000	175	949			1						-	-	-					
	L	L		51		358,573					2,114,858		0				21,611,634			131,762	129	-										15	7.	16,	202,489	18081	99,170	92	87,1	12,500	161,043	139,742	3,200,187	-	30	59,375	230,849																
ON/STE	COUNTY :	20,000				00000	130,00	20000		270,000	200,00		20,000				19,215,000		2,769,310	000'06			2,859,310						-			-																	-		-	-					-						
898.442	2.112.086	1,478	7,113		(1,066,899)	1,107,388	183 730	186 310		41,525	421,750		149,856				23,409,001			123,050	21,006	2000	147,184		50 963	304,537	153,363	19,853	919,352	42,899 503 E04	30.201	259.269	600,709	123,738	140,183	7,738	71.985	9,492											1							1	ı	-				-	
	T					1			at .			•	İ							3	1	İ							1	+	l				1	1													1	-						1					-	+	
P24688 - Boardman - Upgrade Fire Protection P24705 - Bk. Banlare Culturation Desires	eld Shoot	8N - Desktop Computer Fitness Program	HVAC Chillen	Gas Mon	P25924 - Boardman - Replace Upper 30% Bailer	Critical and	P26938 Boardman - Utterade Ash Handline Sw	Suppretaion	Janing Estima	BN: Vehicle Vintage Replacement	D Fans	POSTON - BN-Add Water Treatment Automation	SALES STATES OF THE CONTRACT CONTRACT	son timer	P36108 - Sdmn-CCR Landfill Wells/SWStruct	ılıı	Kunz	ilection in the same	38 Fund	Por Tools & E	Dr.m.s.	estation	Total Blanket Projects		Facio	Jul.				Boardman - coal chute detectors	7.654	Aercury CENES	P26256 - Boardman - Install Water Recovery I	P35554 - 3N - install Wastewater Now Meters	ession Sys				2	ompressor.			No. British Press Access takes		DOR.	5		on Chillers	510	BA: Install Video Conferencing		al Engine	railer		Install OH/UG Service SVPRM	ATTR TEMP	A CALL	tes	P36004 - BN: Install VFD for Cumper Orives		BN: Upgrade CEMS Data Controller		The state of the state of
Upgrade fi	P24806 - BN: Expand Maint & Weld Shoos	er fitness 8	Admin Side	226499 Gen Plants Insti Trans! Gas Mon	725924 - Boardman - Replace Upper 30% B	Toursell of	Uperade A	Coal Dust	Decommis	eplacemen	VSDs for	er Treatme	200	P35500 BN: Install Sewage Langer Line	indfill Wel	Rall Section	r Cyber Se	Blanket Project	ation fitne	Virghase M	Install Plat	winds flor			P35210 - 8N Capital Tools & Lab Equip	P35350 - 6N Install new LEO lighting	BN - Install Climb Assist in Stack	8N - Replace \$5.34.5ev cutouts	BN - Replace T. Coal Yare Sel.	detectors	ecial attac	Fundant 5	nstall Water	/astewater	P35162 - BN: Replace Dust Suppression Sys	P. COS. Yang	8N-Install Turb Crane Safety Impy	BN - install Carty Res Flow Meter	P35484 - 230kV Pole Replacements	P35643 - SN Purchase New Air Compresso	1 報告は 第一日	SELC HOPES	Notice and	BN: Enhance Physical Security	P35987 - BN: Buy Pulverizer gearbox	BN: Perchase Control instruments	smen!	Control No.	Vacor Cont.	Muluan	SN: Replace R2 Conveyor Belt	P35807 - BN: Upgrade Calculational Engine	F #1 84d	- Coo	VPRM	WIL Benns	BN Install Setting on 58-2 Room	OTO devi	o for Oum	on Batter	a Controll	-	To the last of the last

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	•	
8N - Failed DSI Blower Replacement											161,712						161,712		
BN: Replace 5 Gallery Belt 12A		-		-							21,467						21,467		
555 - Megawatt Meters for Backup								-					28,455		(40)		28,415		
P36445 - BN: Gen CIPVS Security Improvements				-		-							305,200		7,047		312,247	*	
BN: Replace Check Valve PW1013				-									62,667				62,667	,	
Total Unplanned Projects	3,397,433		4,529,410		577,464		1,365,495		258.862		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)	240,000	12,278,863	7,889,650	
																	- 1	-	
CONTO TOTAL	26.952.577	22 674 916	26.250.886	24.764.760	4 757 692	4 642 810	2.082.363	1 385 680	1.423.125	2,639,630	942.415	1.652.580	938.418	1.279,800	(154,601)	982,800	63.163.375	59,461,870	25

- Note:

 J. Annus presented are at the plant level, of which idaho Power is a 10 percent cowner.

 J. Actual copital spend are directly from the operating painter, PGE, and reported at the plant level. Actual copital spend will not tile in total to idaho Power's 10 percent coveneship share sections. Actual capital amounts recorded by idaho Power's 10 percent defended in the 2012 budget amounts presented were included in the 2012 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 budget amounts presented were included in the 2012 budget amounts presented were included in the 2012 budget amounts presented were included in the 2012 budget amounts presented were included in the 2012 budget amounts presented were included in the 2012 budget amounts presented were included in the 2012 budget included in the 2012 budget included in the 2012 budget included in the 2012 budget included in the 2012 budget is a Budget amount of the publication is a budget identification and work order for the capital investment. These new budget identifications and work order for the capital investment.

	24,/55	27362131 BOARDMAN 1-1415 REPLACE DUST SUPPRESSION SYSTEM >	2736
	25,327	BOARDMAN 1-3800 U1/U2 BELT REPLACEMENT	2739
	26,075	BOARDMAN 25452 UPGRADE SWA BUILDING HVAC CHILLERS	2730
	26,478	BOARDMAN 1- 2334 INSTALL REDUNDANT MECURY CEMS	2736
	28,124		2742
	28,430	BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 17	2747
	29,192	27510481 ROARDMAN 1-7194 GEN CIPV5 SECURITY IMPROVEMENTS \$	2751
	30 454	BOARDMAN BASSO 1-1896 INSTALL LED STACK LIGHTING	3736
	30,496	273/ASSOO BOARDWAN 1-5595 REDI ACE COALYARD BALL SECTIONS	2744
	31 092	BOADDWAN 1 2799 CYPED SECIEDTY LIBERANES	7720
	37 491	27362130 BOARDMAN 24795 BEEL ACE GAITRONICS BAGING	2555
	33,300	BOARDMAN 1 3366 INSTALL NEW PLOGGED COAL CHOILE DETECTIONS	2732
	35 506	BOARDAN JOSS INSTALL NEW BILLOGED COAL CULTE DETECTORS	77.72
	35,791	ROARDMAN 1-5039 INSTALL VED FOR DIIMPER DRIVES	2742
	36.853	BOARDMAN 1-3979 LIPGRADE CALCUL ATION ENGINE	2742
	37.455	BOARDMAN 26445 BOILER CLEANING SYSTEM LIPGRADE	2732
	38.629	5	2738
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 Reliability/Safety replacement is necessary to maintain functionality, reliability, and safety of the plant.	40,448	BOARDMAN 23260 2012 MISC PUMPS VALVES & MOTORS	2736
Environmental system.	40,869	27385087 BOARDMAN 1-2702 INSTALL SEWAGE LAGOON LINER \$	2738
Ine Water Yollution Control Facilities (WYCL). Permit dictated mat the onsite day lined sewage lagoons would be evaluated and reconsultened as necessary to continue service for Boardman. At the terms, two of the three sewage lagoons used only liners that were visually evaluated and determined report to conditions on the Wilder promited and FOD conditions. This project sollined one of this two of the lined conditions are the WINCE committees of FOD conditions. This project sollined conditions on the line of conditions are the WINCE conditions.			
This is a blanket project that covered raised pumps, valves, and motors at the plant in 2016, Each year the plant will have unexpected railures and Reliability/Safety replacement is necessary to maintain functionality, reliability, and safety of the plant.	42,062	27452713 BOARDMAN 1-1549 2016 MISC PUMPS VALVES & MOTORS \$	2745
Safety existing gearboxes.	48,042	27403626 BOARDMAN 1-4035 PURCHASE PULVERIZER GEARBOX \$	2740
Safety evaporation pond levels at a manageable level. Two used searchouse were unrehased to fabrication of one "like-new" spare searbox to be placed in-service while maintenance was done on the	48,600	27387019 BOARDMAN 1-1486 ADD WATER TREATMENT AUTOMATION \$	27387
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.	50,676	27328918 BOARDMAN 26256 INSTALL WATER RECOVERY FROM DEMINERALIZING SYSTEM \$	27328
			Т
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.	54,838	27405228 BOARDMAN 1-1549 2014 MISC PUMPS VALVES & MOTORS \$	2740
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.	61,235	27405561 BOARDMAN 1-3894 REPLACE CONTROL ROOM CHILLERS \$	2740
Reliability and communication in the ash handling system.	72,526	27369029 BOARDMAN 26938 UPGRADE ASH HANDLING SYSTEM \$	2736
	86,390	27398057 BOARDMAN 1-3348 REPLACE VARIABLE SPEED DRIVES FOR ID FANS - 2014 \$	2739
Safety protection, as well as on containment of the escapting oil and drainage away to a safe location.	129,832	27300598 BOARDMAN 24688 UPGRADE FIRE PROTECTION SYSTEM \$	27300
This project modified the plant and fire prote water spray protection over the hydrogen sex beneath the operating deck, and provided shi modification indicated the intensity and seven			
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 safety and lacked several protective functions provided in modern systems.	178,344	9	2730
The maintenance and weld shop expansion or large equipment overhauls including pulveritz and crane bay. When the turbine deck and or welding activities set off snoke and fire alarm work space for the Boardman maintenance or	210,344		27300
	211,129	BOARDMAN 3-0517 COLD REHEAT PIPING REPLACEMENT	27394
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 Reliability/Safety at a slower speed, providing significant energy efficiency and savings.	257,808		27363
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.	2,778,967	27363452 BOARDMAN 1-1760 SO2 CONTROLS MODIFICATION BART \$	2736
Purpose Through the BART rulemaking process, the Oregon Regional Haze State Implementation Plan ("RHSIP"), and per the Oregon DOE Quality Title V Operating	Total	Project Description	Proje

	\$ 4,563	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2013 BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2013	2/383258
		BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2017	
			27478622
		BOARDMAN 1-4742 INSTALL VIDEO CONFERENCING	27421548
	\$ 4,974	BOARDMAN 1-6523 REPLACE COAL CONDUIT SECTIONS	27478667
	\$ 5,280	BOARDMAN 1-6125 UPGRADE TOWER ROAD RXR CROSSING	27465262
	\$ 5,460	BOARDMAN 1-6758 UPGRADE BURNER MANAGEMENT FLAME AMP	27481090
	\$ 5,539	BOARDMAN 1-4979 INSTALL POWER/BLOC LOTO DEVICES	27432627
	\$ 6,033		27471375
	\$ 6,201	BOARDMAN 1-5699 INSTALL BELTING ON SR-2 BOOM	27451197
	\$ 6,287	BOARDMAN 1-7432 REPLACE CHECK VALVE FW1013	27514779
	\$ 6,411	BOARDMAN 1-3352 PURCHASE CONTROL INSTRUMENTS	27389116
	\$ 6,498	BOARDMAN 1-1080 1-7070 PURCHASE RETIRE VEHICLES 18	27500623
			27356952
	\$ 6,911	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2017	27478620
	\$ 7,785		27314076
	\$ 8,228	BOARDMAN 1-2701 INSTALL TURB CRANE SAFETY IMPROVEMENTS	27372782
	\$ 8,590	BOARDMAN 1-9772 UPGRADE ID FAN VFD CHOKE COIL	27541909
	\$ 9,035		27361901
	\$ 9,244	BOARDMAN 1-9636 UPGRADE ELECTRIC BOILER CONTROLS	27539444
	\$ 9,776		27452715
		VIN & GROWTH 13	27383253
			27437108
	\$ 10,284	BOARDMAN 1-2114 UPGRADE LUBE OIL PURIFIER CONTROL	27369028
			27428429
		RING SYSTEM	27385085
		BOARDMAN 1-3200 REPLACE TPS DUAL SUPPRESSION SYSTEM	27383410
		BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 17	27478619
		BOARDMAN 1-1549 MISC PUMPS VALVES & MOTORS 2018	27500626
	\$ 11.116	BOARDMAN 1-2099 BN - INSTALL CARTY RESERVIOR FLOW METER	27369026
			27500625
		ROARDMAN 26899 1-1506 INSTALL PLATFORMS 13	27383254
		BOARDMAN 1-1541 7-0582 MINOR TOOLS & FOLLIPMENT 2013	27383256
		BOARDMAN UNDISTRIBUTED WORK ORDER 2012	27361896
	\$ 13.684	BOARDMAN 1-3025 BOARDMAN AS BUILT DRAWINGS 2014	27405232
		BOARDMAN 1 - 286 / INSTALL WASTEWATER FLOW METERS	2/3/2/80
		BOARDMAN 1-3336 INSTALL PRECIP ACOUSTIC HORNS	27387021
		BOARDMAN 1-2585 REPLACE COAL DUMPER CONDUIT	27371159
		BOARDMAN 2010 GENERIC RETIREMENTS	27343976
	\$ 16,104	BOARDMAN 1-3194 REPLACE CONVEYOR BELT R-1	27392270
		BOARDMAN 1-7364 FAILED DRY SORBENT INJECTION BLOWER REPLACEMENT	27491672
		BOARDMAN 1-4973 REMODEL CONTROL ROOM	27435077
		BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	27428431
		BOARDMAN 1-5423 WELL & STORM WATER STRUCTURE	27452741
		BOARDMAN 1-4067 REPLACE R2 CONVEYOR BELT	27419412
	\$ 17,784	BOARDMAN 1-1084 7-580 PURCHASE RETIRE VEHICLES 16	27452711
		BOARDMAN 1-1549 MISC PLIMPS VALVES & MOTORS 2019	27523659
		BOARDMAN 1-1541 7-0582 MINOR TOOLS & FOLIDMENT 2016	27452714
	\$ 18.562	BOARDMAN 1-7757 REPLACE DAMAGED RAIL SECTIONS	27504947
		BOARDMAN 1-1549 2014 MISC PHIMPS VALVES & MOTORS	27428430
	\$ 22,655	BOARDMAN 1-1541 7-0582 MINOR TOOLS & EQUIPMENT 2014	27405230
		BOARDMAN 1-1839 REPLACE COAL YARD BELT	27361908
		BOARDMAN 1-1549 2013 MISC PUMPS VALVES & MOTORS	27383257
rupose roject Description/Justification	lotal	Description	Project

3N: Replace Coal Gallery Belt R15B	N: Upgrade CEMS Data Controller	BN: Upgrade 250V Station Battery	36004 - BN: Install VFD for Dumper Drives	BN: Install Power/Bloc LOTO devices	N: Install Belting on SR-2 Boom	BOARDMAN-OPTIMIZE INTAKE WATER TEMP	BN - Replace Coal Conduit Bends	Install OH/UG Service SVPRM	P36140 - BN - Purchase Flat Bed Trailer	P35807 - BN: Upgrade Calculational Engine	BN: Replace R2 Conveyor Belt	BN: Install Video Conferencing	BN: Install AGC Equipment	BN: Upgrade Stack Elevator Controls	P35787 - BN: Replace Control Room Chillers	BN: U1/U2 Belt Replacement	BN: Purchase Control Instruments	P35987 - BN: Buy Pulverizer gearbox	N: Enhance Physical Security	3N: Bridge Crane Access Ladder	235783 - BN-Cold Reheat Piping Replacemnt	N: Install Precip Acoustic Horns	3N - Replace Conveyor Belt R-1	35643 - BN Purchase New Air Compressor	35484 - 230kV Pole Replacements	3N - Install Carty Res Flow Meter	N-Install Turb Crane Safety Impv	N: Upgrade Lube Oil Purifier Cntrl	N: Replace Flooring @ Coal Yard	35162 - BN: Replace Dust Suppression Sys	35564 - BN - Install Wastewater Flow Meters	26256 - Boardman - Install Water Recovery f	35387 - BN: Install Redundant Mercury CEMS	soardman-Upgrade Precipitator Ctls	Soardman - coal chute detectors	N: S. Settling Pond Frosion Preven	BN - Replace V1 Coal Yard Belt	RN - Replace SS 34 Sky cutouts	N - Install Climb Assist in Stack	235350 - BN Install new LED lighting	P35210 - RN Capital Tools & Lab Fouin	I Inclanded Projects	otal Blanket Projects	35591 - As-Built Drawings - Generation	P35974 - Boardman Business Plan	24067 - Boardman - Install Platforms	2CN094 - Boardman-Purchase Minor Tools & Equ	Blanket Projects 35172 - PSES - Generation Fitness Fund		otal Projects	3N - Generating Plants Cyber Security	N: Replace Damaged Rail Sections	935500 - BN: Install Sewage Lagoon Liner	BN - Replace Coal Conduit Sections	235469 - BN - Replace Coal Dumper Conduit	35193 - BN-Add Water Treatment Automation	35182 - BN - Replace VSDs for ID Fans	3N: Vehicle Vintage Replacement	P27450 - Boardman - Decommissioning Estimate	P27107 - Bdmn-Install Coal Dust Suppression	B26038 - Roardman - Ungrade Ash Handling Sys	P26266 - BN-Install New Fire Detection Sys	P25924 - Boardman - Replace Upper 30% Boiler	225499 - Gen Plants-Instl Transf Gas Mon	P25452 - BN Replace Admin Bldg HVAC Chillers	BN - Desktop Computer Fitness Program	P24806 - BN: Expand Maint & Weld Shops	24795 - BN-Replace Gaitronics Paging	P24688 - Boardman - Upgrade Fire Protection	BN - Misc. Pumps. Valves, Motors	Project Description
																										9,492	71,985	41.349	7 738	140.183	123,738	600,709	259,269	29.401	592.604	42 899	919 352	19853	153 363	304.537	80 962		147,144	3,077		21,006	123,060			23,409,001					149,856		421,750	41,525		136 310	182 770	1,107,588	(1,066,899)		7,113	1,478	2,112,086	305,790	898,442	414,198	Actuals
																																											2,859,310				90,000	2,769,310		19,215,000					50,000		500,000	270,000		200,000	130,000	/00,000					1,500,000				8
																230,849	59,375	30,000	(189)	45	3,200,187	139,742	161,043	12,500	87,844	92,160	9,374	53.124	18.087	202,489	16,560	1.027	15,193										309,342	47,885		129,695	131,762			21,611,634	262.133		11,815			108,314	2,114,858	386,284		300,230	7/0,041/11	558,573		51,269	243,297	98,194	(26,540)	5,379	112,606	233,324	Actuals
																						1																					662,770					662,770		24,101,490	347,600		621,220			268,170	1,642,450	556,930		020,020	10,441,700	743,860		123,790	292,100	91,380			212,340	433,850	В
										346,544	131,015	43,486	273,765	201,932	608,405		1,380	64,000	29,311	11,230	(1,133,664)		1 1 1							***													358,893	132,474			226,419			3,801,395	27 809		762,831			368,548	846,582	2,635		617,467	724,770	18,324		32,571	5,431	3,188			518	546,326	Actuals
																	1 1 1 1 1 1 1																										922,970	18,470			101,250	803,250		3,759,840			895,680			869,270	1,398,310	183,660						20,360		88,810				303,750	Budget
300,230	16,929	95,646	352,814	40,154	15,334	217	11,141	997	4,899	26,252	40,533	4,138	24,326			21,066		238,828												-													188,683	23,417			165,266			528,186	29.272		10,697					281,000			4,000	ACES		14,589						187,975	Actuals
																																											955,610				80,000	875,610		430,070																				430,070	Budget
6,130	10,130	1,400	3,339	14,979	46,491					(6,340)								125,239					*																				277,005	97,686			179,319			846,298	695 65	705,001						207,521		1				532						420,324	Actuals
																											,												1				748,150	173,150		**	75,000	500,000		1,891,480		200,000						768,660	208 540							45,600				300,000	Budget
130,490			,																									2								1							114,661	45,597			69,064			451,997	7917			49,118				105,638						5,224						01]
																																											660,840				50,000		. 1	991,740								512,010	179 730											300,000	
																	251																											23,525			119,319			399,002		183 811		41,217				64,848							100					109,126	6330
																																											540,000 (1	1 1	162,000	54,000				739,800 (16:	100,000	162 000		81,000				108,000								64,800				324,000 (17)	
			7																									1			2												(8,607) 540	Н	162		2,677 54			(163,001) 442	1							7.499 108			1					10				(170,500) 324,000	1
6,130	27,059	97,046	356,153	55,133 -	61,825 -	217	11.141	183,972	4,899	366,456	171,547	47,624	298,090 -	201,932	608,405	251,916 -	61,006	458,067	29,122 -	11,276	2,066,523	139,742	161,043 -	12,500 -	87,844	101,652	81,359	94.473	25.824	342 671	140.298	601 735	274.461	29 401	597 604	47 800	19,853	10 053	153 363	304 537	80.963		540,000 1,529,964 7,889,650	362,378		54,000 150,701 108,000	1,016,885			442,800 50,884,512 51,572,220							3,383,190								255,840		2,085,547 1,500,000		1,011,566	2,024,876	et Actuals IPC Budget

GRAND TOTAL	Total Blanket and Unplanned Projects	Total Unplanned Projects	BN: Replace Check Valve FW1013	P36445 - BN: Gen CIPv5 Security Improvements	BN - Megawatt Meters for Backup	BN: Replace S Gallery Belt 12A	BN - Failed DSI Blower Replacement	BN: Upgrade Burner Mgmt Flame Amp	Virtual Servers for CEMS Monitoring	BN: Upgrade Tower Rd RXR Crossing
26,953,577	3,544,576	3,397,433								
868	2,859,310	•								
22,074,310 26,250,386	4,638,752	4,329,410								
24,764,260 4,737,692	662,770		630							
4,737,692	936,296	577,404								
4,682,810	922,970							-		
2,082,363	1,554,178	1,365,495								
1,385,680	955,610									
1,423,125	576,827	299,822							(3,400)	105,657
2,639,630	748,150	*1				*				
942,415	490,418	375,756				21,467	161,712	54,088		
1,652,580	660,840	•								
938,418	539,416	396,572	62,667	305,200	28,455					
1,279,800	540,000					*				
(164,601)	(1,600)	7,007	-	7,047	(40)	-		-		-
982,800	540,000									
63,163,375	12,278,863	10,748,899	62,667	312,247	28,415	21,467	161,712	54,088	(3,400)	105,657
59,461,870	7,889,650									
6%										

- Notes:

 Amounts presented are at the plant level, of which idaho Power is a 10 percent owner.

 Amounts presented are at the plant level, of which idaho Power is a 10 percent evel. Actual capital spend will not tie in total to idaho Power's 10 percent.

 Actuals reported are directly from the operating partner, PGE, and reported at the plant level. Actual capital amounts recorded by idaho Power incur a one-month lag, resulting in ownership share because AFUC actual rates and overheads differ between the companies, and capital amounts recorded by idaho Power incursed the partners, as a capital incursed and the plant service where included in the 2013 Boardman Annual Review, etc.).

 Budget amounts are those presented by idaho Power in the Boardman Annual Review, etc.).

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 Budget amounts are those presented were included in the 2013 Boardman Annual Review, etc.).

 Budget amounts are incursed were included in the 2014 Boardman Annual Review, etc.).

 Budget amounts presented were included in the 2014 Boardman Annual Review, etc.).

 Budget amounts presented were included in the 2012 Boardman Annual Review, etc.).

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