FEDERAL ENERGY REGULATORY
COMMISSION

SCOPING MEETING

SWAN LAKE NORTH PUMPED STORAGE PROJECT

DOCKET NO: P-13318

OREGON INSTITUTE OF TECHNOLOGY
MT. MAZAMA ROOM
3201 CAMPUS DRIVE
KLAMATH FALLS, OR 97601

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P R O C E E D I N G S

(7:00 P.M.)

MR. WINCHELL: I'm so glad to see everybody tonight. My name is Frank Winchell I'm an archeologist and I work with the Federal Energy Regulatory Commission. Can everybody hear me okay? Move it up -- if you would just a tad thanks, thanks. That's Gaynell Catherine he is going to be our stenographer tonight. I will get into a little bit more detail of that.

So anyway my name is Frank Winchell I'm an archeologist with the Federal Energy Regulatory Commission. With me I have Karen Sughrue, she is a terrestrial biologist, she also works with the Commission. We call ourselves the Commission or FERC as an acronym for Federal Energy Regulatory Commission.

And then we have Joe Eberhardt who will also be speaking a little bit about the project. We will get into that later as well but he actually represents the proposed Swan Lake North Pumped Storage Project. And essentially the meeting tonight is the beginning of our scoping process for an intensive independent environmental review that the Commission, us the FERC, will be doing off of the application that the applicant submitted to us, the FERC, in October of 2015.

So we are just beginning our scoping process to

begin our more or less intensive analysis that we will continue to do for all of this year and next year. Karen will get into more detail about that as well. A little bit about FERC -- we are a federal agency that among other things we regulate wholesale electric prices across the country. We also certificate natural gas interstate pipelines. And then the other big thing that we do is we license non-federal hydro-electric projects.

And it's surprising there's hundreds of these non-federal projects -- when I first came to the Commission I worked with the Corp of Engineers and of course we knew that we had our federal dams but there is quite a few of the non-federal licenses that we issue on a yearly basis. So we have had quite a bit of the hydro-electric re-licensing we do.

And again tonight is the beginning of the scoping process for this particular review of whether the Commission -- and the Commission is five Commissioners that are appointed by the President. And they will ultimately be the deciders of whether we would issue such a license. Today we went out in the field as part of the scoping to get kind of the look see of the project.

Now tonight we are going to go ahead and start off with Karen she is going to give us an overview of what we are doing here as far as the scoping and getting ready to

do our environmental analysis. Then that will be followed by Joe Eberhardt who is with EDF, he represents the applicant which will give us an idea what this project is and he will be giving a PowerPoint presentation.

And then third of course which really is the core of our reason why we are here is to solicit comments from you all to help us with our scoping and that's the information concerns, opinions, positions and issues that you may have that we should know about so it helps us in our analysis.

And we are being recorded by our stenographer there, Gaynell and so I don't think I need to say but I think as long as we keep it very civil and you all look like a great group of people and I don't think there's going to be any problem with that. The other thing I would like to say is that it's up to everybody else here but we will try to get through all of this in a reasonable amount of time. I'm thinking whenever but let's just you know -- if you have something to say be as cogent as you can.

And I would recommend no more than 3 or 5 minutes and I think that would be great. Well very good I am going to go ahead and pass the mic to Karen here so thanks again for coming.

MS. SUGHRUE: Thanks Frank, so my name is Karen Sughrue and I am a terrestrial biologist working on this

project so I am going to briefly cover the agenda for this evening. We have already gone through introductions. I am going to go through a couple of housekeeping items and as Frank said we will transition to Joe and he will give a description of the project then we will come back to me and I will talk about the purpose of scoping. I'll go through each of the resource issues that FERC has currently identified for addressing in our Environmental Impact Statement, then I will go through our preliminary schedule for putting out the EIS and then I'll cover some of the types of information that we are requesting from the public this evening and for future comments.

Then I will walk through a little bit of our online resources for those that are interested in finding out more about the project and then we will close with public comments.

So as Frank mentioned we do have the sign-in sheets in the front so if you haven't done that already please do and again this meeting is being recorded and the transcripts will be made public. You can go to the project file and download those transcripts they should be available I think within two weeks from this meeting and I'll talk later about how to access the project files.

And as Frank said we have to be considerate of time so that we have ample time for everybody to speak that

wishes to do so. And one important thing is if you are giving oral comments tonight please try to remember to say your name and your affiliation so that our court reporter can put that down. And if you want to submit written comments we prefer you submit those electronically but we do have a mailing address if you are interested. I just would ask that you make sure to put the project number on the first page at the top so that we know where to file those comments to which project.

And that addresses in the scoping document if you haven't gone all the way through so with that I will turn this over to Joe.

MR. EBERHARDT: I'm a pacer so I am going to take the microphone and go for a walk. Okay so introductions first, my name is Joe Eberhardt. I work with EDF Renewable Energy. We are a subsidiary of the large utility in France called Electricity D France so the initials are EDF and we are here to present on the Swan Lake North Project. This is a pump storage hydro-power project. It is a little bit different technology than traditional hydro-power projects that are dams that sit on rivers in similar waterways. I will talk a little bit about that technology as we go through the slide show.

But I want to give an overview of why this particular project is one that we are promoting in the area

as well as talk about different benefits the project has, both to the electrical grid as well as to the community and so I will walk through those now. So this slide and the entire slide deck is over here on the table so if you don't have a copy yet you can grab one on the way out, the entire slide deck is there.

On this slide I want to hit some of the key impacts related to the project -- the economic, environmental and the visual impacts which are some of the key concerns that people have as to how many jobs will it bring, that's usually a benefit impact and in other cases with visual impacts how much of a you know -- obtuse object is this going to be? Is it going to create an issue for us for our view shed?

The economic impacts -- the key things I am going to hit on is the number of full year equivalent jobs. I will talk a little bit more about that later. We have over 3,000 jobs that will be created in a full year equivalent. That full definition is kind of a technical one and what it says -- I like to think of building a house. A full year equivalent of one person working but not necessarily the same person -- so in this case you have somebody that comes in and does the excavation work for building your basement and your foundation, he works there for maybe three months.

Another three months go by an individual comes in

and does the concrete work, laying that foundation. Next three months another individual comes in and does all the stick framing and the last three months of that 12 month year somebody comes in and does the painting and the finish work and so that's your 12 months we had four individuals that were full-time employed at different times throughout that.

So when we look at this 3,000 full year equivalent jobs that's what I am referring to. Most of those will be during the construction period. It's a very large civil works project. It's a five year construction window in total so a very long duration of time that these folks will be employed in the construction.

Once we move beyond that we expect about 30 full-time jobs related to the project on the on-going operations.

The environmental impacts -- this project as I said the technology is a little bit different from traditional hydro-power. It is not a dam on a river -- we are using a closed loop system so all of the water that is used in this project comes from ground water. We are not using any lake water, we are not using any creek or stream or river water and the water that we put into the project stays in the project and gets circulated around through the reservoirs that are part of that system.

As a benefit we don't have the impacts the traditional hydro-power dams have on aquatic species and other types of biological aspects.

Lastly visually this project was originally envisioned by the former developer at about 1,000 megawatts in size which is a very large project. We took over the project about three years ago, did some assessment of whether that project 1,000 megawatts was one that was feasible economically, technically, most importantly will it fit into the electrical grid as it exists today?

What we discovered was that 1,000 megawatts is too big, we needed to down-size the project so the last two to three years we have been working on shrinking the project down to a facility that was the right size for the current electrical grid. That is very important, that helps minimize the additional transmission lines that may have to be put in to support the project and it helps keep things much more manageable size-wise.

So currently we are proposing a 400 megawatt facility that's the approximate size so it is about one-third the size of the previous project. So a few highlights and I will go into these as we move along.

So an overview of my company -- as I said Electricite de France is our parent company in France, the largest utility in the world, world leader in deploying pump

storage technology. Here in the United States our branch of the company EDF Renewable Energy has been focused on wind farms and solar farms and promoting renewable energy in the United States.

We see pump storage as a hydro-power technology as being a good compliment to providing benefits for allowing more renewable energy projects to be built. I think we all know from solar and from wind power it is not a consistent output of electricity from those projects. We think of solar power and once the sun sets you are not getting any more electricity out of those solar panels.

The same is true of wind farms. When the wind stops blowing no more power is coming out of that wind farm from the wind turbine. Our project has the ability to take surplus energy and store it. It's primarily a storage project -- until it is needed at a later time and put that energy back out to the grid. That allows us two key benefits. Number one -- we can store energy, fund renewable projects that otherwise might have to be turned off because they are creating too much electricity with all of the renewable projects that are being built nowadays at the same time when they naturally get turned off due to the sun setting or the wind falling off.

We can provide back that same energy to help bolster the grid during that deficit in supply. So this map

gives you a quick overview of the states that we have operated in. We built renewable energy projects, the numbers are too small to see but they talk about the number of megawatts that we have built in each. As a highlight we have built a lot in California and we have built a lot throughout Texas and the Oklahoma area of late.

Wind has been booming quite a bit in that region. We have over 1,000 employees in the United States and our headquarters are located in San Diego. This "worldwide map", not quite the whole world, it's leaving off the North America and South America. This gives you an idea of where we have gone out and developed pump storage projects in other countries outside of France. Within France we have over 8,000 megawatts related to pump storage across about 12 different projects.

Most of these are located in the Alps Mountains along the French/Italian border and much like the area here that we are looking to take advantage of, it is this great difference in elevation that you find in rough terrain or mountainous terrain that provides the opportunity to build these projects. You just can't build them anywhere. We need very specific topography.

Looking here at this map you can see we started building outside of our backyard in France across Europe. We have done some projects in Africa. We are now operating

in Israel as well and with the boom in Asia over the last 20 years and the electricity demands associated with that we have built projects throughout Asia as well.

Our most recent large project of 1,000 megawatts was put up in Laos. We are hydro experts we have 1,000 employees focused on hydro specifically. 600 of those are engineers from every walk of life that you can think of in engineering. We have got metallurgists, we have got mechanical engineers, civil engineers, electrical engineers, we have got geo-physicists and all these people do is focus on ways to apply that knowledge to hydro-power. It is a very deep experienced base.

This yellow map here is your electrical grid. This is your regional electrical grid and each of these black lines is the transmission line. What you see with the gray dash line running from left to right is the California/Oregon border. What I am trying to indicate here is where the project is going to connect to the electrical grid since it is very important. Why here? Other than the topography why are we building this project here?

And the emphasis on this slide is that this is a crossroads electrically. We are at an electron super highway between the Northwest and the Southwest. Historically this transmission line the darker black one that runs from the northeast corner down to the southwest

corner has floated electricity from the north to the south when it was needed during the summer for air-conditioning load in California when it got hot down there.

And then during the winter California would turn around and six months out of the year would turn electricity to the Northwest during our periods of intensive electric demand when it was cold. And that is how that system operated with the existing electric grid probably until about 1995 and at that time what we found was that California was booming faster than the Northwest. Population was growing, commercial activities were growing, Silicon Valley was growing and as a result their electrical demand was much greater.

And so the power flow shifted to be predominantly a south-based flow. The electricity was flowing out of the Northwest to the South and that's how things have been for probably the last 20 years. What we see as a renewable energy company using our insight into renewable technology where it is having a greater demand, where these projects are popping up -- is that we see a large surplus of solar energy being developed in California that is going to in the future about 10 years down the road start resulting in a solar export out of California that will be northbound.

You have to have some place to move that energy. They are required by the state to have those facilities.

They have a renewable portfolio standard in that state that requires the utilities to go out and procure energy from renewable projects. Solar is the leading technology in California for doing that. Solar is only around about 8 hours of the day so as they are trying to meet their average need for a 24 hour day they are going to have a big bubble of excess energy during the daylight hours. That energy is going to get exported to the Northwest.

Similarly on this super highway that we have for electrons is all the wind farms up here in the Northwest. Most folks have probably been up to the Columbia River Gorge and seen the proliferation of wind farms over the last 15 years, there's a lot of them up there providing a lot of additional electricity to the grid. In the future we are going to see more retirements of coal plants. All the nuclear plants are pretty much retired in the Northwest with the exception of the one that Bonneville controls, but as these coal plants go then the wind energy will find a home.

Right now the point being is that wind farms sometimes create surplus energy in the Northwest similar to the solar discussion I was just having related to California. So as that energy is created in surplus when the wind blows in the Northwest it needs a place to go. Your other option is to have the energy curtailed, have the projects turned off.

This graph is an output graph from the wind farms that are connected into the Bonneville power administration control area and so on the left axis -- I don't have a laser pointer so I can't point with the laser pointer, I will use my finger though. I don't think it points to the stream or does it -- it does, success okay.

So what we see here is a jagged set of lines. This is the wind blowing -- we have almost 1,000 megawatts and a typical wind farm is about 150 to 200 megawatts in size right. This is a collection of wind farms that are pushing electricity onto the grid and even though they are moving electricity on to the grid this intermittency is the gusts of wind that move through the wind farms okay.

Once that storm front blows through, this is over a multi-day period, 5th, 6th, 7th of January, 8th of January -- once that storm front blows through there is a lull, okay. High pressure areas bring a lot of wind, low pressure areas don't bring wind. So high pressure area pushed out, low pressure area came in until the next storm front came through. They went from call it an average of 1,000 megawatts down to zero coming from the wind farms for a multi-day period.

So to support the grid, all of the electricity demands of the consumers, that means all of the fossil fuel power plants are kicking on to fill that energy need. So we

have surplus energy at times here, we have deficit of energy related to renewable energy projects and we have intermittency that is up and down -- it is very hard for the grid to manage this as they add more and more wind farms and solar farms to the grid.

This is an example again related to the Bonneville grid. There is a lot of traditional hydro-power projects in the Northwest, this time frame is the common snow melt and run-off that pushes all of that water to the hydro dams. And if you have ever driven down the Columbia Gorge during this time frame sometimes you will see they are actually spilling water, it is not going to the water turbines and creating electricity, there's so much water going down that river they spill it over the dam and so it is lost energy opportunity.

When you combine the water in blue with the additional green energy that was coming from wind related to the demand at the time what you found is that there was wind curtailment. Bonneville had a choice as a grid operator they could curtail their own projects or they could curtail somebody else's projects. Their particular projects had environmental constraints on them related to water. They were in a bit of a pickle.

They had a choice to either shut down wind farms or to spill more water. They couldn't do that because as

they are pushing water through their dam water has a certain characteristic when it comes out of the turbines it has different characteristics as far as oxygenating the water when it is spilled and so they are in a bit of a pickle as to what they were going to do -- spill water, run it through the turbines, no spill water and it was actually environmentally friendly in their mind to curtain the wind farms.

So what we saw was wind was curtailed. The reason wind was curtailed was because there was no place for that electricity to go. Not because the wind was trumping the water or vice-versa the water was trumping the wind, there was just not enough demand. This time frame it is not very hot, it is not very cold right -- demand for electricity is very low.

A power project like that was would give us the opportunity to buy this energy and store it for days or hours until it is needed and the grid is able to absorb it.

So some of the things that we can do -- I was just mentioning being an additional load sync -- okay we can help Bonneville with some of the difficulties. I had pointed out the variation in the graph of the jagged line where the wind blows and stops and blows and stops in a fairly quick order. We can provide flexible capacity to help balance that out and smooth out the energy flows to the

grid.

And lastly we could provide peaking energy so when the wind stopped entirely we can move energy through our project and create electricity as needed. Transmission is one of the additional benefits as well. One reason why we down-sized our project -- our focus was on trying to get the project to fit into the existing grid. Those wires that run all the way from the Northwest down to the Bay area just outside of San Francisco, they are utilized -- they are meant for peak capacity. That means their design was for essentially the peak demand day of the year during the summer in this case serving California.

What we are doing is all those other months of the years where those lines would not be fully utilized and there is slack capacity we would be bringing our electricity down those lines and storing it at the project and later moving it back out on the grid. So we would be helping to use the existing transmission infrastructure in improving the efficiency of it.

Greenhouse gases and portfolio effects are related to other projects, not ours. In this case the greenhouse gas when we provide peaking energy to the grid, Klamath Cogent is a facility that is nearby not too far away that provides peaking energy to the grid as well, we will have the potential that if our energy is cheaper than theirs

to displace them at times as a peaking generator that could still be used as a base load generator but at the times of the year where they would be used as a peaking generator, fossil fuel firing up to provide energy as needed, we could provide that same energy and that displacement is going to help reduce greenhouse gases in the region and throughout the west coast.

The portfolio effect is that our power being cheaper than theirs will be providing lower costs to electric consumers. Okay I am going to turn over now to my associate here Ben Ludwig who is going to talk about some of the economic and local impacts, both at the county level and at the state level and to the important topic of jobs.

MR. LUDWIG: Thanks Joe I appreciate it. I am going to stand at the podium, much less of a pacer. So this is one of my favorite slides because it talks about the jobs that are generated from these projects. We do economic evaluations of most of our wind farms and I go to rural areas in Kansas and Oklahoma, Texas and speak to groups like this about these jobs.

And so a little bit about my background -- I started out as an environmental consultant about 10 years ago monitoring on a lot of the wind farms that went into the gorge. Thanks -- and so I met a lot of these folks alright we have this 9 year pre-construction phase the direct jobs

are in red and the indirect jobs that are created by the sort of economic cascade impacts of the people who come to this area and spend their money to fill up their gas tanks and change their tires, stay in hotels, and go to restaurants are directly benefitted from the economic activity from the project.

And so I get to meet all of these people on all of these projects and I can tell you that we have a lot of local labor here in Oregon and in the Northwest largely skilled operators who can operate blades, who can operate D-8's who can weld, construction managers, electric engineers and so forth and they have to spend a lot of time working on projects like this in other areas.

And when I monitored on those wind farms that we built in the Northwest here back in 2006-2007-2008 all of the local people who got jobs were really glad to be working back in Oregon, back in the Northwest where they could see their families and they could spend time close to home.

So that's why this graph speaks to me here. It's a lot of numbers but there are individual stories of people whose small businesses directly benefit from the economic activity in these areas. The Windmill Caf in Sperryville, Kansas, the Midway Caf in Adrian, Texas -- so many different people that I have met who have benefitted from the economic activity of these projects. I can't state that

strongly enough.

To touch a little bit more on the full year equivalent jobs to reiterate let's say year four you have 303 direct jobs in construction of the project. That could be 250 40-hour full-time jobs and then another 53 multiply that by 2 -- 106 20-hour a week part-time jobs to make out that full 303 full-year equivalent jobs.

Moving on -- okay so during the operations phase EDF one of our core companies operations and maintenance of wind facilities and we intend to be available to do the direct operations and maintenance. I will say one more thing about this graph too though -- there are entry level full-time positions in this job. There is somebody who has to hold the grade rack for the belly dump truck to put its gravel down to make the road for the Swan Lake. That's an entry level job that anyone could theoretically apply for and one of the things I see in the rural areas that I go to is a lot of youth flight from people who just can't find an entry level job when they are 18, 20, 22 years old in the area where they live and it's a problem.

This is part of a solution for that problem to get those entry level jobs at EDF where you can go and turn a wrench on a windmill for a couple of years and get some experience under your belt and you know move forward into your career.

So you have 11 direct employee jobs so there will be a manager, possibly some engineers, some entry level techs, probably be picking them up at OIT for their summer jobs. Service jobs related to that gas station, restaurants, retail and wholesale for purchasing, some construction jobs weed abatement in the contracts clearing out the snow from the access roads, things like that. All of this economic activity rolls up into it and when I first started doing this I wasn't super impressed by 11 jobs and then I went down to a facility in Silverton, Texas and the County Commissioner was like you are going to make 12 to 14 full-time jobs for Silverton, Texas for Briscoe County. It's not a small feat, it's meaningful to people and it is kind of why I do this.

This is my last slide here it tells the story of where the direct employment is going to come, there are going to be 170 jobs directly in Klamath County, 1270 for the rest of Oregon for a total of 1,440 and these are a lot of folks that spend most of their year over in Nevada and Texas and Southern California. We have the local labor and the skilled people who have to spend a lot of time working in other towns and being away from their families. This is -- we have the people in the state to bring them here and the skilled folks to build this project.

I think that's about it for me.

MR. EBERHARDT: So what you see here is an overview map of the project. I had shown you the electrical grid map, the yellow one previously that focused on this area here, the Malin substation is at this location. The blue line is a transmission corridor that connects the project here in the Swan Lake Valley all the way down -- this is approximately a 30 mile transmission line that will be built in a 230 KV standard. Most of the poles will be mono-pole designed so they will have kind of a minimal visual impact.

The project itself sits up in the Swan Lake Valley, it has a location that puts part of the facility this reservoir here, the man-made lake that sits down in the Valley floor and an upper reservoir that sits up on the escarpment the difference what we call the project path -- the difference between those two reservoirs is 1,600 feet and that is one of the key reasons why we chose this particular location.

Projects of this technology-type in California usually work with project head hikes of about 700-800 feet. We have almost doubled that. So for the same turbine that's parked at the bottom of that escarpment when the water flows downhill from the upper reservoirs to the lower reservoir we have almost twice the impact due to the gravitational force pulling that water. They make these projects a little bit

more cost effective.

The water that we are using for this project comes from ground water rights that we will be leasing so we will not be using water from any of the surface water as I had mentioned before. We have preliminary approval from Oregon WRD based on our application that we had provided to them. There was a meeting here last year in April that talked about the water aspects of this project. The ground water wells are in a fairly unique sub-basin within Swan Lake Valley that allows them to run at a fairly high flow rate without impacting other neighboring wells and we have done some assessments on that to ensure that that is indeed the case.

The property that is involved in this project is a mixture of private land and BLM. In particular for the transmission corridor about 40% of this land falls on BLM land and with the prior developer who became involved in the project it went through a stakeholder process of sitting down with various groups, environmental groups, private landowners, the BLM and looked at five different pathways to get energy from here to here.

Some of those ran down through the Poe Valleys some of them ran out to the east and in the end the takeaway point was at the preferred pathway that had the least impact for that entire collection of stakeholders all having very

different opinions and positions was this path here. And so a good chunk of the project got pushed on to BLM land for the transmission piece.

The actual project sitting up here -- I call these the main facilities -- the main facilities sit on about 80% private land and 20% BLM land. A project interconnection point down here at Malin puts us into the Pacific Corp service territory.

We do not have a customer yet for this project. We have two critical path items that we need to get through. One is the FERC license. You are here participating in that process of getting the FERC license reviewed and hopefully issued. And the second is an off-taker. We need a utility customer for this project and albeit we are interconnecting to the Pacific Corp System. Once we get to that point of interconnection we are on that electronic super highway. We have the ability to access a variety of utilities throughout the Northwest, whether that is Puget Sound Energy, Portland General Electric, Bonneville, Pacific Corp as well as utilities in California that are south into that super highway, Pacific Gas and Electric, Southern California Edison.

This is a diagram, kind of a cutaway schematic of the project itself. The former developer who had worked on this had a below ground facility that they had in mind when

they did the conceptual design. This is the powerhouse -- I'll go through a very quick description of the key elements of the project that might help you understand the technology a little better and how it works.

So there's a few key elements -- one is an upper reservoir, the other is a lower reservoir. The operations are fairly simple they move water from the lower reservoir to the upper reservoir and then back down. This is a storage facility because to move the water from the lower reservoir to the upper reservoir we have to run a pump actually three pumps -- we have three reversible pump turbines that will be sitting in the powerhouse and these pumps will consume large amounts of electricity from the grid and push it uphill kinetically and store it in this upper reservoir as potential energy.

And that entire system can be reversed so when we want to recreate that electricity and put it back on the grid. All we have to do is open the gate flow the water back down the hill, back through the reversible pump turbines and they create electricity that goes out on the grid. It goes out on that transmission line I showed you on the previous map.

The connection though between the lower reservoir and the upper reservoir between these two designs is quite a bit different. The original design was to have a shaft that

dropped water about 800 feet underground to the powerhouse which is about 600 feet underground and then discharge it into the lower reservoir. There was a lot of underground works, a lot of concrete, a lot of steel. We wanted to investigate and understand whether that was feasible because one thing that I understand from having worked on geo-thermal energy in this area is that the basalt flows that you see in the buttes around here are usually multiple layers. You have both solid basalt, layers of ash, more basalt that flowed on top of that and was solid and then more ash and you can see them decaying everywhere you go around.

You can see these buttes around here and how they are decaying. This same material could potentially be that same loose rock. That's very dangerous for construction purposes. You have people down there in the shaft trying to work this concrete and work the facilities that need to be down there and also it is costly for us to put additional concrete -- reinforced concrete and steel to support all of that rock above the facility.

We came into this location and to this location and we drilled pilot holes about two inches in diameter to get a better idea of what the rock structure was in that area and what we found confirmed our fears. This design was not feasible, it would be too costly.

So we decided to re-design the facility and moved this water conduit to an above-ground steel penstock so this section here represents a pipe made out of steel. It is about 2 inches thick in its wall thickness, 4 meters in diameter, one single pipe as it is moving water between the upper reservoir and the lower reservoir.

And that allowed us to get around the issue of this unstable rock. So at our last meeting there were some questions around where is this transmission line going in particular. It is pretty obvious where the main facilities are in the Swan Lake Valley but a lot of folks had questions about the transmission corridor -- I wanted to go ahead and get a quick overview here of this transmission corridor. Most of this information including this map book is in the FLA or the FERC final license application which you can find on the FERC website. It is publically accessible, there's lot of information there related to all of the studies that we have done.

Each of the slides I am about to go through fairly quickly here walk down this corridor and give you an idea of how we have shaped this to fit into the topography but also to fit into people's property lines as well and try to minimize the impact on private land. First I want to start with the top of the escarpment -- this road here, this is on the upper part of the escarpment so this is the entire

upper portion of that ridge line. This is all controlled by corporate private timberland at this point recently harvested within the last 10 years, so most of this has been cut away.

There's a zig-zag collection here a maze of dirt roads. What we are looking to do is focus on this particular dirt road that moves all the way out to the ridge line and improve that with rocks to make it suitable for construction vehicles to move out. So the first slide here is the impact on this particular land owner and the 7 mile road improvement that is necessary. That road comes up here to the upper reservoir so right about here is the ridge of the escarpment and where my red dot is down to the southwest corner is the escarpment itself.

So the bottom of it is about here and the top of it is here. There's almost 2 miles as the crow flies -- excuse me 2 kilometers of distance between the top and the bottom of the escarpment. This road comes up to the upper reservoir location again mostly sitting on private land. The light green you see here is BLM land and our main impact on BLM land is the small section of the reservoir corner and the penstock shooting across the BLM swath -- they predominantly control the escarpment itself.

Upper reservoir drops down to the penstocks and all the way down to the powerhouse located here to the

northwest of Grizzly Butte this is a large hill down in the valley floor. And on top of that hill we would place the lower reservoir. The transmission line pops out of the powerhouse and runs this way off the map and I will show you more of that as we go. What you will see in this satellite image is pivot farms, they call out very easily.

This area here is the NRCS wetlands and the ephemeral lake of the natural Swan Lake which is here. So as you move off the last slide, this is the transmission line avoiding all of the wetlands area, again avoiding as much as we can the agriculture practices that are being done here with pivot farms and not all of them are pivot farms in this region obviously.

Move further along again trying to harness BLM land as much as we can, we drop back down onto the valley floor, nip the edges here of these pivot farms as we move along. So again seeing how we are trying to fit this into the topography as well as to the land owners. Unfortunately the transmission line is not straight, property lines aren't straight. If we get to areas where we have to have a bend in the transmission line for various reasons -- sometimes that's to avoid a feature here which is a small hill or in this case just to bend the transmission line to move on to the next ridge in the next valley.

This bend happened to fall on BLM land a little

easier to manage that on private land there can be some more challenges in trying to get it to fit in because of the type of land use between private land owner versus really wilderness or near wilderness of the BLM land. So moving along -- we get to the Harpold Dam you may be familiar with that historic dam location.

Our intention is to get the dots are the poles for the transmission line. Our intention is to get as far back from the Harpold Dam as we can and try to span most of that distance in one fell swoop. They have a minimal impact here on the Bureau of Reclamation's location.

So you can see the light green is all of that BLM land where we are proposing to locate the line. As we get to the end of the line we get to the Malin substation that's this facility here which sits in a large ravine. We connect into the south end of that facility at that point we would be on the main electrical grid.

There are several KOPs or known observation points that are included in the FLA that you can find. I have selected one here. This is showing for the main facility the closest public road to that that you can get to -- to see, you know, what the project might look like. This gives you an idea of kind of the before and the after. The key thing that you would be able to see is the penstock it's this line here. Again this is almost I think about a

mile and a half from this road all the way across to the other side of the escarpment it is a very big area out there.

This is only a 4 meter wide pipe. So looking at a 4 meter object from a mile and a half away it is not going to look too big. We will replant this as best we can, we will paint the pipe to try to blend in to the escarpment. The transmission line which shoots out over Grizzly Butte and runs along the base of the escarpment here is shown and if this image was blown up you would be able to see it but from what a native I would see looking across you actually cannot see the transmission line at the 2-30 scale and that's one of the advantages of moving to this smaller transmission line.

The towers associated with it are about 90 feet high. The towers on the prior 500 kV transmission line were about 180 feet high so we have almost cut the height in half. As we have planned this line out as we move down the various valleys we have purposely stayed off of the ridge lines we don't have a flagging issue so if we were to think of my arm as the ridge line, avoiding having transmission poles sticking up okay because they could be seen from very far away.

We have some tucked down below the ridge line. So next I am going to turn it to Sandy Slaton. Sandy works

for ERM which is our environmental supporting and permitting company that has supported us on this for the last several years, Sandy.

MS. SLATON: Hi, so what I wanted to talk to you about are the protection mitigation enhancement measures that we have developed as a part of the project application. The protection mitigation enhancement measures are called PM&Es in FERC language. So it is a package of measures that provides support for any of the potentially impacted resources in the project area.

These address water resources, recreation and land use, esthetics, cultural resources, geology and soils, botanical resources, health and safety and wildlife resources. And in your oh what did I just do -- sorry -- I hit the monitor button. So in the scoping document that you either have looked at online or is on the table there, there is a detailed list of all of the PM&Es that we have proposed for the project.

But what I wanted to do here was go into a little more detail about some of them that aren't really that clear in the titles. So there are some specific plans and programs that address particular resources. There's a comprehensive soil erosion control plan, substances, spill prevention and clean-up plan, operational adaptive water quality monitoring and management program, topic safety

plan, public safety plan, a historic properties management plan and then some recreation enhancements including an educational interpretative facility that would give periodic tours of the Swan Lake North Pumped Storage Hydro Project.

Those plans and programs some are fully developed at this point and some are in development and will be further fleshed out as the NEPA process moves forward and the license is developed. There's also a suite of measures that are contained in the Re-vegetation Noxious Weed Management Plan, that plan has been written and is available as a part of the final license application.

That plan includes direction on how pre-construction noxious weeds surveys would be conducted, weed control measures during construction and then along the transmission corridors as we walked down the map book there are some temporary roads that would be needed for transmission pole placement and stringing of the lines in some locations. And for the most part those roads would be temporary and they would be removed and re-seeded and re-planted and those areas then would be monitored for 5 years at least for success of vegetation regrowth.

And in addition to those areas there are other temporary disturbance areas that would also be re-vegetated. So all of the work associated with that is included in the Re-vegetation and Noxious Weed Management Plan.

Additionally the project has developed a Wildlife Management Plan that has been completed with consultation with the Wildlife Management Agencies on the contents of that plan and that includes a suite of PM&E measures that developed to address any impacts to wildlife from the project.

And I am going to go into a little more detail about that in these next slides because it is not contained in your scoping document in detail. That includes -- there are a suite of measures that are included both in an Avian and Bat Protection Program and an Ungulate Protection Program. We roll that into the Wildlife Management Plan to make it a little bit easier to digest and easier to find those PM&E's.

The Avian and Bat Protection Program includes pre-construction after surveys and then any additional consultation that's needed if we find that nests are being used or not used as we anticipated or if we find anything that we didn't anticipate. Bird flight diverters will be installed this says at three locations but it is more like -- it's more like five locations along the transmission line and it is more than one span at each location. It's locations that when we have consulted with management agencies there are areas that we are expecting that there would be migratory birds or other birds moving through those areas.

So the bird flight diverters are sort of -- look like pigtails they are metal pigtail-shaped pieces of wire basically that get attached to the line so that the birds can see them and they will run into the line. We would minimize lighting around the facility. There is fencing all around the reservoirs, the reservoirs are not providing habitat so they are fenced off to prevent wildlife from becoming entrained in them and keep them out of the reservoir facility.

And so there will be additional monitoring of the transmission line and of the reservoir fencing to make sure the animals -- there weren't any collisions or any problems there and if there was -- if something was found, if there were any problems found there we would work with the agencies to figure out what we needed to do next. The Ungulate Protection Program includes ongoing consultation during construction regarding ungulates. Dust during construction it does reduce dust from construction vehicles, weed control which is also dust and Re-vegetation and Noxious Weed Management Plan and then this de-commissioning and re-vegetating of the access roads that I talked about.

And then wildlife crossing opportunities for birds that are linear penstock feature and I will show you a map that describes that a little bit in more detail. Additionally the Wildlife Plan includes measures for land

acquisition for conservation, big game water developments, two of those along the escarpment or a little further down from the escarpment and then some road improvements and access for BLM habitat improvement projects and some assistance to BLM for Juniper removal which will be a part of their Bryant Mountain Juniper Removal Project.

So this is the zoomed in version this top one, this is a zoomed in version of the upper and lower reservoirs there and this line here is the penstock. The areas that are blue of the penstock are completely buried underground so wildlife could cross over them directly. The areas that are green are the darker green there's 8 to 12 feet of clearance actually underneath the penstock and then on the lighter green areas there are over 12 feet of clearance underneath the penstock so that -- just because of the shape of the escarpment were able to construct the penstock in a way that wildlife can actually cross underneath the penstock as well so there is opportunities throughout the escarpment for crossings.

So I had talked about potential conservation acquisitions -- these lands that are shown here are the lands that are adjacent to the project that are potential for acquisition. These yellow hashed properties are not publically owned properties currently so they would be ideal locations to purchase for conservation acquisition. There

are some other lands that aren't right adjacent to the project that are under consideration as well but we are in discussions about those now.

So this really busy map shows all of the wildlife PM&Es that are easily displayed on our figure but it is really busy at this scale I realize. A couple of things I can point out here though the green areas along the transmission line here are -- there's another couple down here are areas where we have bird flight diverters proposed because those areas have potential flight paths for birds.

The water guzzlers that we talked about there's one proposed to be there and this is a repaired water guzzler there and those are particularly important during the hot summer months when there is no water access for wildlife. The other thing that we can see on this map pretty clearly is the blue areas are portions of BLM land that are included in the Bryant Mountain Juniper Removal Project so we wouldn't necessarily be working out all of those lands but areas within that would be eligible to be included in our PM&E package for Juniper removal.

So how we got to this package of PM&Es is that there were quite a few studies that we have conducted throughout the licensing process to really understand the environmental landscape of the Swan Lake north area. We started with ground water interference and well capacity

testing that we talked about last year in this room with the water right's meeting and then also some water quality monitoring and modeling.

We have conducted wildlife habitat and vegetation surveys throughout the entire project area including the transmission line and all of the mapping of that work is available in the final license application on the FERC website. We have done an involved visual impact analysis that involved completing photo montages of what the completed project would look like at 26 different locations around the project area.

Some of those are areas that are very much publically accessible so that you can see what the project would look like from a public viewpoint. Other areas are less accessible but we really just wanted to get an idea of what the project would look like from different viewpoints so that's all available on the e-library.

There was an economic impact analysis that Ben talked about -- we did a local traffic study and then we also did a transmission route alternatives analysis but if you have been following this project for a while you have probably seen that we started with I think the original project proponent started with I think 5 transmission route alternatives and we have been through a number of generations to land on the proposed route that we are

currently considering.

And then there is a cultural resources study and a geo-technical study, both of those have been started and we have both cultural resources and geo-technical information for a good portion of the project but those are both ongoing now so we can get additional information. The cultural resources information will be used to develop the Historic Properties Management Plan and then the geo-technical information will be used to further the project design.

And I am going to hand it over to Joe.

MR. EBERHARDT: Thank you, so this slide here talks about the water use. I am not going to spend a lot of time on this because we talked about water about a year ago with the community. I did want to highlight where we landed because when we met here last year we knew they were going to downsize the project, we were not quite sure what size the project was going to be. We were thinking something in the 300 to 400 megawatt range. We did land on 400 megawatts as being the proposed size.

And if you remember from the meeting that Mary Grainey led from the OWRD we were proposing almost 11,000 acre feet of water rights, that's quite a bit of water. And that was the amount that was needed to support that thousand megawatt project. With the project size that we have landed

on we are down to 3,001 acre feet that will be needed for the initial fill. After that first year the actual operations annual need is 420.

And this amount is related to two aspects -- one is evaporation from the water reservoirs which are open on top as well as leakage. We expect up to 2% of the water will be lost due to leakage. All together we are looking at about 11% of water impacts that will have to be re-filled. So quite a big difference to go from 11,000 acre feet down to 3,001 -- we will be able to return those water rights back to the land owners so they can get back to doing their agricultural work much quicker than we would have otherwise. The old project would have taken almost two years to fill. In this case we can fill the project in as little as 8 months.

The water as mentioned before comes from underground aquafer and it comes from three existing wells and pumps and we will be operating well within the characteristics that those pumps and wells have operated for decades so definitely working within that without impacting the watershed.

Our next steps for the project going from where we are at now to the next few years as Frank had mentioned they are looking at going into the NEPA process of doing the environmental assessment for the project that is going to

take a little bit of time. In the immediate future for 2016 we will be completing our cultural field studies that need to be done for the project site, we have found some cultural resources within the facility footprint as well as in the neighborhood if you will nearby. I will be looking to come up with a management plan of how to work with those as well as cataloguing and making sure that we treat them reasonably.

2017-2018 we will continue with geo-technical studies. As I have mentioned we have done some drilling out at the site into the earth to understand the rock integrity. As we advance our engineering design we will have to do more of that in different forms to better understand the rock quality in the area and we will be improving and advancing our engineering designs. We are about halfway through the design phase. It's a bit like designing a house, you know that you want a craftsman style house, you figure out the number of bedrooms and bathrooms you want that's the conceptual design but you really don't know what it is going to look like, one-story, two-story, three-story blah, blah, blah.

We are moving now into the more final schematics related to the project that will happen over the next two years.

Lastly in 2018 based on the commitment of

schedule that FERC has proposed we are anticipating that the FERC license -- the final license will be issued in early 2018 and that will be based on Frank's team and their work and how they move through that process. It is also in part based on how quickly we respond to the questions they have because it is a feedback process. As they move through their review they will have questions of us and we will need to respond promptly to ensure that we stay on this timeline.

Lastly, our planned agreements -- water agreements as you can tell we are kind of in a late development stage but we are still in the development stage. We don't have a green light from FERC to go ahead with this process yet without the FERC license. We do not have the authority to build or to operate this facility and so we have been hesitant to move quickly and to land agreements with folks until we have more certainty and are closer to that FERC issuance of the license in 2018.

So for those of you out there that may have seen that your property falls in the transmission corridor, if we haven't had an initial discussion with you yet we will be getting to that but it may be a few months yet before we start engaging you on that and I appreciate your patience. And that's it for our presentation, Frank. Thank you for the time.

MR. WINCHELL: I think we will take a ten minute

break if that's alright with you all. If not we can move on to the next quick discussion on the FERC process but who wants to take a break? No? Excellent, cool.

MS. SUGHRUE: Okay moving into the purpose of scoping. The National Environmental Policy Act, FERC's regulations and other applicable laws require evaluation of environmental effects of licensing, re-licensing of hydro-power projects so this is a scoping process it is a part of NEPA and it is used to identify issues and concerns to be addressed in the NEPA document or the EIS in this case with input solicited from federal, state and local agencies, Indian tribes, non-governmental organizations and the public. So we are here to discuss existing environmental conditions, potential information needs and resource issues to help us identify you know if we are missing anything, are there any gaps?

Do we need to focus more on one particular issue or de-emphasize our analysis on another issue? So these are the resource issues that we have currently identified and I will go through each one of these individually.

So geologic and soil resources -- so we are going to be looking at the effects from erosion of exposed and disturbed soils on soil resources and proximate surface waters, effects of shallow landslides on soil resources by either construction disturbances or the placement of

excavation soils on steep slopes, effects of penstock placement along the fault line and potential rupture resulting in large scale erosion or landslides on soil and surface water resources and the effect of project operation on reservoir shoreline erosion and bank stability.

So for water resources we are going to be looking at the effects of project construction and operation on the water quality from the potential release of contaminants, the effects of project operation on ground water quantity in the project area, the effects of project construction and operation on drainage patterns affecting fisheries and aquatic habitat and project area water bodies and the effect of project operation on the water quality in the two project reservoirs.

For terrestrial resources we are going to be looking at the effects of project construction and operation on the spread and control of noxious and invasive weeds, effect of project transmission lines on raptors, water fowl, shore birds, other migratory birds and bats, the effect of permanent and temporary wildlife habitat loss due to the construction of project features.

The effect of project facilities acting as a barrier to travelling in the migration of ungulates and other wildlife, the effect of noise and human presence occurring from project construction operation and

maintenance activities on wintering ungulates and breeding birds and the effect of project construction, operation and maintenance on special status species.

For threatened and endangered species it is the effect of project construction and operation on short nose and long river suckers in the Swan Lake Basin.

For recreation and land use the effects of project construction and operation on recreation resources and recreational use in the vicinity of the project, the effects of project construction and operation on planned or existing parks, public land or access areas, dispersed recreation areas and trails in the vicinity of the project.

Effects of project -- construction, operation and maintenance on agriculture, irrigation, residential and other land uses in the vicinity of the project. The effects of construction traffic including dust and noise on the land use.

Recreational use in the project area -- effects of the transmission line on air traffic in the vicinity of the project.

For esthetic resources it is the effect of project and operation that resources in the vicinity of the project. Effects of light and glare from the construction and operation of the project on the area residents, recreational use in the night sky in the vicinity of the

project, effects of the construction and operation related noise on surrounding uses including blasting for the reservoirs and powerhouse and the use of equipment and helicopters during construction.

For cultural resources we have effects of construction and operation of the proposed project on historic archeological and traditional cultural resources that may be eligible for inclusion in the National Register of Historic Places.

Effects for socio-economics we have the effects of the project on the local economy of Klamath County including the conversion of productive farm land energy development and effects of the project on property values in the project area. For air and quality and noise we have the effects of project construction and operation on air quality and the effects of project construction and operation on noise levels in the vicinity of the project.

For developmental resources the effects of timing of project pumping and generation cycles on project generation. For cumulative effects we have identified esthetic resources and the geographic scope for esthetic resources is the Lost River Watershed and we are going to be looking at a time scale of 30 to 50 years in the future.

So excuse me -- so this is our draft schedule for the EIS preparation so right now obviously we are conducting

scoping meetings and depending on the comments that we receive we may issue a second scoping document which would come out in September, 2016. Then in March of the following year we would issue a Notice saying that this project is ready for environmental analysis and then we would have another comment period and that deadline would be somewhere around in May 2017 and then hopefully around October we would issue a Draft EIS with comments on that due in November of that year.

And then the following March we would issue a Final EIS. So the type of information that we are looking to solicit here from you tonight you can see the full list in your scoping document under Section 5 but some of these are issues like significant environmental issues that should be addressed in the EIS.

I am assuming that a lot of you are local residents here and so you know the resources a lot better than some of us would so you need to express those and clearly tell us those things if we are missing anything so we are also looking for information on data describing past and present conditions of the project area.

If you know of any resource plans or future proposals in the project area you know developmental projects, anything else going on that we might need to be aware of and we have a list of comprehensive plans in the

scoping document but if you know of any that need to be added to that list or updated in that list please let us know.

And so for our online resources what you can do to find out more information about the project is you can go to our website, www.ferc.gov and down there I have the red circle where you can find that on our web page. There are a lot of different ways you can access project information and for filing comments you can either use our e-file or quick comments. Quick comments basically you can just type in your comments in a box. I think the limit though is 6,000 characters so if you have extensive comments you would want to use our e-filing system and our website would walk you through that but if you need any tech support you can always email FERC there's an email address at the bottom or call you know at the number also available and someone should be able to walk you through that process.

Also if you want to just read through filings on the project you can go to our e-library and use the project number P-13318 and look up what has already been filed on the project but if you want to get information about future filings, anything that will come in in the future you can e-subscribe, e-register first and then e-subscribe to the project so you could to e-register and you would put in your email address and that way anytime anything new comes in you

get an automatic notice about the project so you would e-register first but then you would actually e-subscribe to that to this particular project using this project number and that way you don't have to just keep continuing going back and forth and checking it to see if there is anything new.

And that's it, that's what we have and so now we would like to open it up for public comment.

MR. WINCHELL: I'll be right back so you all can get ready and then we will go ahead and start with comments. Be right back. I want to add too on these comments again tonight we are going to get comments orally from you all. You can also follow-up with comments and it is on your scoping document I believe it is on page 15 but it gives you instructions on how to send those comments and again if all else fails and I still use the snail mail a lot so the address is there so you can always write a letter to us and that will get put on our public record under this project.

And the important thing to remember tonight is the deadline for comments is September 9th so that's a month from today so please get your comments in before that period so that we can go ahead and begin the second process which would be if we feel that there is more information coming in we will go ahead and do a second scoping document. So again please get those comments to us by September 9th, okay

thanks a lot.

Alright so tonight we only have 7 speakers so if time permitting we can always continue with other folks if they would choose to speak so the first one up is Greg O'Sullivan.

MR. O'SULLIVAN: Good evening Commission and members of the public. I'm Greg O'Sullivan I am the Executive Director with Klamath County Economic Development Association. We are going to continue to go on record in full support of this project. We have been an early proponent of this project and we still believe that it is on target to create the economic assets that make Klamath Falls perhaps recovery that much faster from a national and state-wide recession.

I am going to keep my comments to a minimum because we are going to file our comments in writing as part of this as well. But again I think that the project developer and proponents have outlined many of the economic development assets with the projects including the jobs, the tax base associated with it with minimal impacts to other industries.

At the same time we actually really support this scoping process. We want a good project, we want all of those factors that might affect industries, companies, business climate in general to be fully vetted as part of

this project but as we look to it we think that a lot of the numbers that have been stated tonight are probably conservative and understated. We think the public benefits to the secondary job generations are probably higher. We see you know things like hotel spin-offs for hotel and lodging establishments, food establishments, service, tractor repair and things like that will probably be much higher as well as probably even some of the housing construction as well as part of the secondary benefits of this project.

As I looked at this project coming on about a year ago as the Executive Director I also started looking at what this project means as far as stability. This would be the equivalent of a commitment of a small company for five years and I can tell you having been in economic development for over a decade right now the moment that a company locates to an area you never really know how long their commitment is for that area.

We have seen projects fall short, companies that just said they were going to stay a long time. For Klamath County we have seen industries decline over the years. This is a fitting place to have this hearing too because Oregon Tech was one of the first academic institutions I believe in the nation to have a renewable energy degree program. So again it is cutting edge, it is something that we can be

proud of and I think that it will attract attention from other businesses, companies and populations alike, thank you.

MR. WINCHELL: Okay next is Todd Andres.

MR. ANDRES: Thank you very much. I'm Todd Andres, A-n-d-r-e-s. I represent Klamath County Chamber of Commerce and the current President. Back in 2012 our Board voted unanimously to support this project and we continue that support today. That is why I am here and due to time and to hope to start a trend I echo Mr. Sullivan's comments. The only thing I want to add is projects such as this will add a strong tax base to our county when it desperately needs that to manage its budget and help with reinforcement of police, jails and the such.

This is a proven technology. It is one that quite honestly not only Klamath County but the nation needs to embrace. It is the most effective battery for large energy and it is something that we can say that we are going to be one of the first areas in the nation to re-start this process in this country. So again Klamath has the opportunity to be a leader in the nation.

And the last thing I will just say is as renewable portfolio standards start to change within the states, this type of project is going to help reinforce and make a solid ground for some of the renewable energies that

are going to be coming and again it is an important project for Klamath County to embrace so again we embrace it, thank you.

MR. WINCHELL: Thanks, okay I have next Glenn T. Lorenz.

MR. LORENZ: I am Glenn Lorenz. I am not a public speaker but I will do the best I can. My question -- I wasn't aware of the scale back of this project until this evening. My question is still I think about it -- I own a ranch in Swan Lake. Our irrigation wells were drilled in the early '60's. We have -- farm, we have been using to irrigate farm ground, pasture ground, we have been keeping static levels and pumping levels since we were required to do so.

My question is if our pumping static levels decrease because of the extra pumping being done in the north will Oregon Water Resource Department protect our water rights? That's my question -- I don't know who I mean we have a legal right for so much water we have been doing everything we are supposed to do and if the static level drops I would like to know who is responsible for that.

We went through 3 years of drought, we haven't had any that the well's static level which we are required to report have been the same, no differences. So my question is I would like to know who would be responsible or

what will happen if the well static level drops, that's all.

MR. WINCHELL: Thank you. Next is Tony Pate --

MR. PATE: I'll pass.

MR. WINCHELL: You'll pass, okay thanks Tony. Matt Iverson.

MR. IVERSON: Sorry I'm not a public speaker either that's why I had to write this down. And this will be slightly longer than the last three gentlemen, or two gentlemen. My name again is Matt Iverson. My family and I live with our three children and reside at 5921 Bergdorf Road, Bonanza, Oregon. And on these maps it appears that we live -- right there is the Harpold Gap or the Harpold Dam and it goes -- these transmission lines go right by them and that's what I am going to be talk about.

At this location the line according to their renderings they sent us will be about 300 feet above the bottom of the Gap or the roadway there and it's about a 45 degree angle from the front porch of my house and again mind you I have three kids. And if this transmission line is allowed above ground as requested it will have devastating environmental effects on wildlife.

From the visual esthetic standpoint this will permanently degrade the quality of views from the southern Bonanza base and the eastern Poe Valley. The Harpold Gap is a major flyaway for migratory geese and eagles. They fly

between 200 and 500 feet negotiating strong winds in the spring and fall mostly the spring. They fly night and day during their migration.

Present transmission lines are drawing 50 to 60 feet in the same area kill numerous birds and I know because they land up in my pasture. The death from these proposed lines which appear to be within the fly zone would be horrific. During the migration the sky can be darkened with thousands of geese flying through this gap and I know because I live right there.

The right-of-way also cuts through the path of the annual mule deer migration. The removal of the trees and brush would adversely affect their habitat. And then here's another point -- any short term economic benefit from this project will be over-shadowed by the long-term costs and irreversible damage to the natural environment.

Any short-term construction jobs which more than likely will come from out of the area and quickly leave once the construction is completed should not be justification for ignoring permanent environmental damage and also the property values. But also again another point automation of jobs continues to lower total employment so I don't know how to explain that. That gentleman there explains that there would be a lot of jobs I do believe that these technical jobs automation will limit jobs.

And for the local residents in Bonanza, especially those living in the Harpold Gap, the devaluation of property will be substantial. The tremendous views, the vistas which represent the Native Americans and also the people who live there enjoyed for centuries will be permanently altered.

It has been represented that there will be significant property tax revenue I guess you said 2.1 million increase from this project however the assessed evaluation of properties in this area affected has not been determined. I have special concerns for our family, the EMFs from the line, several hundred feet overhead is an unknown but major concern.

The sound from these lines will no doubt be a source of disruption and a true negative to the peace of our present existence. The light effects, radio and television reception, cell phone reception are also unknown. I am on call with my profession, several other residents in our area are also on call and the overhead lines could affect their employment.

The generation portion of this project is not my concern at this time however the transmission lines will not be placed in the existing right-of-ways and not placed underground I'm sorry I said that wrong -- however the transmission lines which will not be placed in existing

right-of-ways and not placed underground definitely is.

In this request I also advise the environmental impact be addressed in this EIS, the cost of undergrounding or at least the undergrounding specifically sensitive areas should not be outweighed by short-term economic gain. And I also request the ability to submit additional comments and information prior to the closing date which they did describe, but again thank you.

MR. WINCHELL: Thank you very much. Next is Marvin Cantrell.

UNIDENTIFIED SPEAKER: He's not here.

MR. WINCHELL: Okay, finally our 7th speaker is Perry Chocktoot.

MR. CHOCKTOOT: Like Frank said my name is Perry Chocktoot, P-e-r-r-y C-h-o-c-k-t-o-o-t. I am the Director for the Culture and Heritage Department for Klamath tribes. I have been involved for a long time with this project and this project will in fact destroy religious prayer altars of the Klamath tribes that have been in existence for thousands of years. Is that better? Like I said it will in fact destroy prayer altars that the tribes have used literally for thousands of years. It will also destroy the spiritual integrity of religious landscape.

On the pole issue they failed to mention that they lowered the pole height but they doubled the pole

numbers so there are twice as many poles now. So there is twice as much of a percentage for the birds to die because of the poles.

For project proponents to say this project is going to create local jobs is actually speaking out of place because it will be the successful bidder on the contract to say who works and who doesn't, it is not going to be a project proponent.

This is going to be the litmus test for FERC to use good judgment as this project benefits the French government, not a French company it is owned by the French government -- 80% and it is also going to benefit the state of California not us here locally at all.

For you that remember the Ruby Pipeline they made big promises. There is nobody out there working that pipeline now, you can see it from space. They re-vegged it with an invasive species, it was completely handled wrong. We supported it here in Klamath County thinking of that same tax revenue that we were promised. I am not sure how that was spent.

Because of this project destroying prayer altars there's actually going to be an AIRFA violation. American Indian Religious Freedom Act violation because those altars being destroyed will take our ability to go pray over them away. Our people sneak into the back side of Swan Lake --

we don't tell nobody but since the 1860's when they told us we couldn't dance and do ceremonies and pray in the way that we did because they were afraid of our ceremonies, we did it in secret. We snuck in off the 22 Road and occasionally you might see a wisp of dust up there and that might be one of our elders sneaking back to the truck.

We don't tell anybody about it because it is something personal. This would be like chopping down the Sistine Chapel for us. It is not just a little piece with the footprint in, it is in the top reservoir or the bottom reservoir, it is the entire rim. The U.S. Forest Service has documented literally hundreds of cultural sites in the form of these prayer stacks all up and down on their property. BLM also knows that there are these prayer stacks up there.

A couple of years ago we worked to stop a trail project that was going to literally put the general public right on top of our prayer stacks. There is also going to be a NAGPRA issue that is Native American Grave Protection and Repatriation Act because a lot of these prayer stacks sit over the top of human remains. We know we have had a lot of meetings involving this project.

One of the biggest things that stuck out was today I heard from project proponent that this project does not pencil out, it does not pencil out. We don't know who

they are going to sell it to, we know that the French government owns 80% of it and we know California which is the largest user of electricity west of the Mississippi is going to continue using electricity.

To think that they are going to pump electricity back out of California and store it in this is not realistic, it is not realistic guys. Bonneville Power right now is trying to revamp their electrical grid because they can't handle the power that is put on it right now. And the reason today that was given for high energy levels versus low energy levels is because when the water flows real fast in Bonneville they have to shut the wind turbines off because the power grid can't handle it and vice versa when the wind blows they run the water straight through the dam because it can't handle it.

The grid can't handle the power that is being generated right now. The power by the way dissipates off the line that means it kind of comes off and so you have to keep recharging it. Traditionally we have never used electricity off that power grid. Our power comes from the coal mines and coal fields of Colorado and Wyoming. That power grid the Cogent plant and this one sends power and electricity to California and that is it, we will get nothing out of this.

I heard mentioned today that this had a hundred

year life expectancy. I heard 40 years. After 40 years this plant is going to sit there empty -- if it doesn't pencil out it might be earlier than that if it is allowed to go through, if FERC certifies it. So with that I hope FERC uses good judgment in the certification process of this and you know I have a lot of sympathy for the land holders that this power grid has got to go through.

I have done a lot of hunting and you get up there like on PsyChan 4 you hear those power grids just bzzzzzzzzz there is no getting away from it. So I know when you raise cattle it may produce low calf weight sometimes they abort calves because of it. So I just hope we all can understand this thing from start to finish and deal with it appropriately, thank you very much.

MR. WINCHELL: I've got about 20 to 9 so I think we can still continue if anybody wants to go ahead and speak. Come on up. I want you to come up to identify yourself and who you are affiliated with, okay.

MR. VENABLE: I'm a rancher. I go back and forth to California and Oregon and my power down there costs me 42 cents to run my pumps in California, that's during peak time which is during the day. So my question is you guys talk about doing this project, you are going to make the power during the day and pump it up at night is that what you are talking for the power?

MR. EBERHARDT: The project will respond to the needs of the grid.

MR. VENABLE: But basically if the power goes to California you are going to be using it pretty much during the daytime.

MR. EBERHARDT: At this time it looks like the modeling shows that the main power production will be during the late afternoon.

MR. VENABLE: My peak time is from 2 to 6 in California. So why don't we do solar? We would get rid of the water we would get rid of the penstock. If you took the total number of acres that you are putting on the reservoirs because you are taking out production that's 250 acres and you could put in solar panels and that would cut down on everything, the migration and everything, that's my question.

MR. EBERHARDT: So solar is one energy resource. It's one that my company develops as well as wind farms. Projects are going in all across the west in California in particular because it is sunny down there and ones are starting to show up here in Oregon and eventually they will show up in eastern Washington as well as these states respond to their respective renewable portfolio standards.

This project is a bit different. All of those renewable energy projects are producing new energy. They

are providing additional electric energy to the grid, new supply. Our project doesn't do that. All it does is move the timing of when that energy shows up on the grid. So we are strictly a storage facility. We take energy off the grid at certain times and then put it back on at others.

Yes, we are taking the electricity to turn that pump to push the water uphill, yep, so we consume the electricity and we turn it into a new form of energy, a mechanical energy of water elevated -- perched in that upper reservoir and it is held there as potential energy until it is needed and we release it. It becomes kinetic, it then runs back to the pumps which move backwards and now they produce electricity.

One question that was brought up earlier today was is energy lost during this process? And yes it is not a perfectly efficient system. No mechanical system is so we have about a 78% efficiency cycle so for every megawatt of energy that goes into this project we have about .78 megawatts that come out. So we have roughly about a 25% loss from the energy that goes in versus the energy that goes out.

Now that's true with regards to absolute energy but the reason why we are using energy from the grid to run those pumps and to push that water up hill is because no one else needs it. It is surplus energy and we are buying that

at rock bottom prices. As an example we might be buying energy at $20.00 per megawatt hour and using that to run our pumps. And 6 to 8 hours later we may turn around and release that water and have it flow back down through the penstock, create electricity and sell it at $60.00 a megawatt hour, that's a three-fold increase.

Yes we did lose 22% of our energy but the price times the quantity with the price changing between when we procured it and when we sold it back was a three-fold difference and that more can make up and help the project pencil out as an economic and viable project.

MR. CARTELL: How much --

MR. WINCHELL: Sir a name please.

MR. CARTELL: Marvin Cartell.

MR. WINCHELL: Got you okay.

MR. CARTELL: How much of that profit stays in the community?

MR. EBERHARDT: That's a reasonable question. I don't know. That's my reasonable answer. It really depends on who the off-taker or who the utility is that will ultimately be using this project. If it is a company like Pacific Corp how many people here are Pacific Corp customers? Okay local utility. If that's our off-taker then you have that answer.

The interconnection point that we are connecting

at the Malin substation on this electron highway as I referred to it is a gateway both to many utilities in the Northwest as well as those in the Southwest in California. So in the Northwest we would have access to having utility customers such as Portland General Electric based out of Portland, Oregon covering the entire Willamette Valley from Salem north.

Puget Sound Energy, Avista Corp over in eastern Washington, Ida Corp in Idaho, okay all of those are accessible to the Northwest. To the south moving down along the electron super highway we will have access to Pacific Gas and Electric based out of the Bay area and Southern California Edison based out of the LA area. And these are all different customers. As I was describing the electron super highway in the past prior to 1995 that energy seasonally switched and flowed different directions and so those utilities in the north and in the south work together as to when they would send each other energy, they had a special contract called a banking contract that allowed one entity to sell energy to a utility in the Northwest so coming out of California and going to the Northwest.

They would use that energy and they would keep a tally. Every megawatt that they got from California they would keep a tally and it went into a virtual bank. And California had the right during the summer when they needed

electricity to call on that bank for those megawatts and take them as they needed them to meet their demand down in California.

So utilities both in the Northwest and in the Southwest have a long history of working together and given this particular unique location of the project on the border between the Northwest Oregon and California I see that the project will allow that to happen again, a lot more interfacing between the Northwest and the Southwest.

MR. WINCHELL: Anyone else?

MR. BOCKEY: Good evening my name is Steve Bockey. I have two or three businesses here that our family runs. Our family has been here since the early '20's. First of all I want to say that I don't know if I was a leader in technology back in 2003 I installed a 1.75 megawatt power plant on three buildings, one in Klamath Falls, one in Lakeview and one in Alturas.

And I can tell you that being a producer of electricity there's a lot of variables. Number one nobody is talking about the winter time when the power is really low. Summer time it is kind of sometimes too hot and right now I am sitting upward 120 days now I have been sitting without my power plant working because the technology from 2003 has changed so fast that I can't find anybody to manufacture boards for my converter from AC to DC or DC to

AC, I'm not sure which it is.

But what we have to understand is some of these projects -- our was basically funded by the taxpayer and this sounds like to me it is going to be funded by a company that has a shareholder base I would assume. So when they gave my family $720,000 in tax credits to manufacture or produce $30,000 worth of power a year do the math. It never works out.

Okay -- if you want to come see it I will come show you the power plant that is not working because I haven't got the technology to get it going again. So I myself am in full support of this. I have got a power plant, I have seen how they work and unfortunately the rules change after you build your power plant unfortunately people change the laws and the rules and we wind up giving away free power. We can't make money on the power we produce so there is a lot of variables in this whole program but I think this is something that's not being done by the government I don't think -- our government.

And it's not being supported by our government or you the taxpayer so this is the kind of thing that I am fully in support of, thank you.

MR. WINCHELL: Anyone else?

MR. GILBERT: My name is Stan Gilbert I'll come up here so you don't have to crank your neck looking at me.

I am a past President of the Chamber of Commerce and I am currently on the Executive Committee at KCEDA but in my career I am a mental health provider, I run a mental health clinic and am the state designated Mental Health Director for Klamath County and my organization is the designated community mental health program.

I mean we are responsible for mental health treatment, alcohol and drug services, civil commitments and all kinds of other things that go along with behavioral health. Generally at any one time across the nation 25% of the population has a diagnosable psychiatric condition, that's a lot of people.

And we serve thousands of local residents. When I came to town there were I think 6 active mills cutting timber and there were family wage jobs that were available for individuals graduating from high school. They could support their families and live a middle class life. Spotted owl put an end to that and the closing up of the woods. My view is that we haven't recovered from that so let me tell you about what my day is like.

Typically in Klamath 35% of our population lives below the federal poverty line. Statewide it is 22%, nationally it is about 18%. We have pockets in Klamath where half the people in certain communities are living below the poverty level. About 30% of our families and

children are living below the poverty level.

And this produces ag and now it has been going on for a couple of generations so now we have generational poverty that has been in place and the effects of that are an abnormally high level of meth abuse, an abnormally high level of substance abuse disorders. We get to treat meth babies and meth children where I work every day, not a dozen of them, hundreds of them.

We deal with kids with fetal alcohol issues, chaotic families, parents who can't raise their kids, we have an abnormally large percentage of grandparents raising young children because the parents aren't able to take care of their own kids. We have a real high degree of mental health disorders in this community. And I am convinced that it is all related to the poverty issue.

We have another interesting statistic I will throw at you and that is that we have an abnormally large percentage of seniors living in poverty and one reason for that is that our young adult population is dissipating, they are moving out of this area. So as we are becoming older and older and older as a community and if you look around and look at even in the ad businesses we don't have young people taking over those jobs, the average age of a farmer in this country is what 63 or something like that.

We have got economic issues here. And one of the

reasons I got involved with the Chamber and other resources is because I am convinced if we could bring in 1,000 family wage jobs I wouldn't have to work so hard. Now I understand there are a lot of other issues involved in this project but I will always come down on economic development for this community. I will advocate for it and I will always support 10 jobs, 5 jobs, 50 jobs, 100 jobs, it all adds to the welfare of this community and I will support this project.

MR. WINCHELL: Anybody else? Going once, going twice, I believe we are adjourned. Thank you very much for coming out tonight I very much appreciate it.

(Whereupon the meeting was adjourned at 8:53 p.m.)

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceeding before the FEDERAL ENERGY REGULATORY COMMISSION in the Matter of:

Name of Proceeding:

SWAN LAKE NORTH PUMPED STORAGE PROJECT

Docket No.: P-13318

Place: KLAMATH FALLS, OR

Date: AUGUST 9, 2016

were held as herein appears, and that this is the original transcript thereof for the file of the Federal Energy Regulatory Commission, and is a full correct transcription of the proceedings.

Gaynell Catherine

Official Reporter