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Edward M. Graham, Sr., on New Steam Turbine in Veazie

WLBZ Radio

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Title: Edward M. Graham, Sr., on the New Steam Turbine at Bangor Hydro's Graham Station in Veazie
Date: October 21st, 1954

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[transcript begins]

Speaker: By this time, many members of the public have seen the new Edward M. Graham Station, a new generating plant in Veazie, which was dedicated last week. The plant was named for Bangor Hydro's president, Edward M. Graham, Sr., who is with us here tonight to tell us by transcription something about this new station and what it means to the electricity consuming public. Mr. Graham, when was the first generator installed up here in Veazie?

Mr. Graham: Well the first gas turbine unit was installed in 1950, four years ago.

Speaker: And successive units, in what order?

Mr. Graham: In 1951 another gas turbine unit of 6000kw capacity was installed.

Speaker: The latest one is steam which differs from the other two.

Mr. Graham: Unit number three is a steam electric generating unit, and was installed when we first started operating for test purposes about a month ago.

Speaker: It's not yet tied into the line, that is, as a regularly producing machine?

Mr. Graham: It's tied into the line as of today.

Speaker: And your buildings, I know, I was up here to do a feature for the commercial in late 1951 and I noticed that this is an entirely new building which has just been built onto the other one and at the other end of this building where we are now, which houses the steam unit, is temporary. Do you anticipate even more expansion?

Mr. Graham: That is right. We started this building in the spring of 1953 and it's completed as of now. The east end of the building is a temporary construction in anticipation of enlarging this station which we will probably do within the next four or five years, increasing the capacity of the station from about 25,000kw to 50,000kw or more.

Speaker: Well let's put that, as we did last week, into terms that the average person would understand. A kilowatt of course is a thousand watts and 50kw is 50,000 watts, a lot of light bulbs.

Mr. Graham: That's right.

Speaker: Can you tell us something about the gas turbines, the first ones that you have installed here?

Mr. Graham: Each of the gas turbine units in this station is rated at 5000kw with maximum capacity in excess of 6000kw. They consist, essentially, of a low pressure compressor, and a low pressure turbine on one shaft operating at variable speeds between 4200 revolutions per minute and 7500 revolutions per minute depending on the load and the high pressure compressor. A high pressure turbine on the second shaft generating at a constant speed of 8694 revolutions per minute. The generator is driven from a high pressure turbine shaft of 3600 rpms. The generator is rated at 6000 kw and generates 60 cycle alternating currents at 13800 volts. These two units can be quickly placed in service from a cold start and are utilized primarily for peak load generation and as standby units in providing continuity of service under adverse water power conditions.

Speaker: Well now, to get into the new unit, one thing that impressed me is that it's smaller than either of the two gas turbines yet it generates twice as much as either one. Can you tell us something about the operation of this new unit?

Mr. Graham: Unit number three, recently completed, contains the first steam electric generating unit in the company's system. The prime mover is a standard turbine generator rated at 12000 kw, 3600 rpm and generates 60 cycle automating current at 13800 volts.

Speaker: There's a big boiler that operates in conjunction with this new steam unit into which I have looked and it certainly looks mighty hot in there. It's also large, it's almost as large as a small one family house. Just how does that tie in?

Mr. Graham: Well the old fire powered boiler with a rated capacity of 125000 pounds of steam per hour, supplies steam to the turbine. Pressure of 600 pounds per square inch and temperature of 825 degrees Fahrenheit. Upon leaving the turbine, the steam is passed through an 11000 square foot surface condenser supplied with cooling water from the river.

Speaker: If for some reason you decided not to use oil to build up the steam pressure in the boiler out here, could you use coal, convert to any other fuel?

Mr. Graham: That station is designed and constructed to permit the addition of coal handling and burning equipment should it ever become desirable or necessary in the future. Future plans and the temporary construction of the east wall adapt as our load growth requires.

Speaker: For a long time, I and everybody else in this vicinity, had been used to hearing the name of Edward M. Graham connected to Bangor Hydro. Just how long has it been Mr. Graham?

Mr. Graham: I became Chief Operating Official of the company in 1913 and it's been nearly forty-two years.

Speaker: You, of course, have seen tremendous changes over that length of time, needless to say. About how big was the Hydro when you first came with it?

Mr. Graham: Well, the generating capacity of our three stations was in the vicinity of 4500 kw. Today we have a generating capacity of nearly 70000kw. We supplied about six communities in 1913 and now we supply over 100 communities.

Speaker: Quite a lot of growth, someone was telling me, in the last seven years, around 1947 or so.

Mr. Graham: Well, as I remember it, about 1947 our prime load was about 17000kw. Today our prime load is about 50000kw, or in other words it's grown almost three times in the last seven years.

Speaker: How big is the Hydro, that is the physical facilities that reach out from the various generating plants, and also how does this one here at Veazie Graham Station compare with your other generating plants?

Mr. Graham: Well now this station here is the largest station. It's three times larger than any of our other plants. We have fourteen hydroelectric and fuel burning stations on the system.

Speaker: How many miles do you cover?

Mr. Graham: From one end of our system to the other is about 240 miles.

Speaker: Which requires considerable wire and generating, that is, transmission lines and so forth. Do you have the figures on that?

Mr. Graham: We have about 300 miles of transmission line and around 2100 miles of distribution line.

Speaker: Well, there certainly has been considerable change in the consumption of electricity since 1913 when you first came with the Hydro and many of the electrical appliances which are making life so much easier for everybody today. It's certainly going over big by evidence of that fact that even in the last seven years since the war when production got back into civilian goods, the demand upon the hydro system has almost tripled. I'd like to thank you very much Mr. Graham for your interesting information about this new station out here and I hope that we'll be on hand when you knock out that east wall and extend a little bit farther. Thanks again.

[transcript ends]

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