Interview with Michael Gregerson
Northern States Power Company (NSP)

Interviewed by Margaret Robertson
Minnesota Historical Society

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MR: What was your background before you joined NSP? Are you a native of Minnesota?

MG: I grew up in Rochester, Minnesota. My parents grew up in Bemidji—we're all from Minnesota. I went to school at the University with a background in engineering and public health.

MR: Did you work at NSP immediately or did you have prior positions at other firms?

MG: Oh, I've worked for an aerospace engineering company—wind tunnel testing jet engines. Then I ended up at NSP.

MR: Have you always worked in the area of environmental emissions in NSP?

MG: Yes, either from the environmental engineering aspect—siting, licensing coal plants—pretty much that background all the time.

MR: What are some of your responsibilities in the job you presently hold?

MG: Our department in NSP tends to be pretty much middle ground for making sure that the company facilities operate within the permits and the standards and the laws that they have to work with. So we spend quite a bit of time working with the operating people, whether it's a coal-fired power plant or a division service center that has hazardous waste that they have to deal with. We also do monitoring work in the environment that needs to be done. So we have people who run air quality monitoring stations. We do river sampling and groundwater sampling. So we have staff that do that. And then the third part is dealing with the outside world—the regulatory agencies, the environmental groups, and the public hearings. In a sense, it's complaints. We try to take care of all three segments.

MR: How big of a staff is involved in this?

MG: Over the years it's varied between thirty and forty-five depending on the amount of work and the number of projects we have. It's balanced out to about thirty-five people.

MR: Has there been an increase in the number of regulations that you have to follow?
MG: There's been a big increase from the point of view that both federal and state government have expanded their scope of things that they're trying to regulate and control--things like super cleanups for hazardous waste, the tracking of hazardous materials from the time they're made until the time they're disposed of. There's a lot more interest in the groundwater area now. We're trying to deal with those cleanups and monitoring the groundwater impact. You can see the increase in regulations when you look at the staffing levels at the Pollution Control Agency. They've nearly doubled in the last five years. Environmental regulation is growing very fast.

MR: How does that affect the cost of operations for NSP?

MG: It affects us in either of two ways. One is that if you have a lot of procedures and paperwork in the regulations you have to follow, you have to have the people to sit down and deal with the paperwork. You also need people to read all the regulations and interpret them and talk to the operating people to make sure that they know what they have to do. Because it's not sufficient just to mail the regulation to a plant and say, "Take care of it."

The other point--which is probably more obvious to the public--is the pollution control equipment that has to be installed. We're in a state now where emission regulations for coal-powered plants are very strict, so plants have to have scrubbers and good particulate collection equipment. We're required to do a lot more emission monitoring. We're getting closer and closer to essentially zero discharge of wastewaters into the rivers.

Just as an example, in the past ten to fifteen years the pollution control equipment associated with the coal plant has gone from about ten percent of its total cost to forty percent of its total cost. It's made a very significant jump--both the capital equipment and then the amount of time and energy spent by the operating team of the plant.

MR: What is NSP's relationship with some of the regulatory agencies? How do you help devise some of the guidelines that you later have to follow? What kind of input do you have in that?

MG: At NSP we've always had a policy of trying to be pro-active and involved in the process. So if there's a publication or a notification by the agency of some area that they want proposed standards, we try to get involved at the front end--both to have our input, but also to gain some knowledge and expertise on what's developing and what's happening. In this way, we don't just wait until the end and then maybe find out it's too late or that they didn't know enough about the subject. They should have hired some expert to help them out a year ago. We've tried to be involved in that role. We were one of the companies that was in the original group that helped devise siting laws for power plants and transmission plants in the state back in 1973. There really wasn't any regulatory mechanism, but the administration under Wendell Anderson decided to form the Environmental Quality Board to put together some processes that allowed more public input. Our company was one which helped develop that whole process of legislation.

MR: What are some of the problems of running a large utility like NSP in
a strongly environmentally conscious state?

MG: One problem is when you have an organization as large as ours, it's a major effort just to keep track of things. We have a lot of power plants located in everywhere from Red Wing up to St. Cloud, so you have to constantly interact with those operating people to keep track of what they're doing and what their problems are. They need to know what to do to operate, and you also need know if they have a special problem that must be dealt with.

The other problem is that for a long time we tried to have a corporate policy of being environmentally conscious and trying to be a leader. And I think, unfortunately, things like electric utilities always become the easy one to pick on. If you look at the acid rain issue, it's easy to blame power plants. People are not so ready to blame the family car for the problem. And since we've tried to be at the forefront of being a responsible utility, we always have to reiterate that message. We have to make the public and the regulators aware of and understand some of the progress we've tried to make, things we're trying to do which separate us from the others.

MR: Speaking of acid rain, the Pollution Control Agency has passed some of the most restrictive acid rain laws in the country. How does that affect your operation?

MG: It affects us in that we're the largest sulfur dioxide emitter in the state, so even though we have made a lot of progress and have some of the most advanced pollution control plants in a utility, we're still the largest emitter and, therefore, in the forefront of people's concerns. Having the strictest ambient acid rain standard in the world puts us in a really sensitive position of making people aware of what our part in that is and what we're trying to do about it. At the same time, the standard is so strict that it can't be met and we are trying to make people aware of that too. So that's kind of a double-edged sword for us.

MR: How are you going to comply with that?

MG: We've agreed with the state to make reductions at one of our larger power plants—the King plant in Stillwater. We're trying now to do some fuel switching and burn some extremely low sulfur coal from Wyoming. We also have made a lot of progress in what we call high technology applications. We've converted some of our power plants in Minneapolis and Burnsville to things like an atmospheric fluidized bed boiler, which is a new technology we're trying out, retrofitted to the units with what we call a lime dry scrubber and banghouse combination—pretty much state of the art in SO2 control. We're constantly trying to find ways to increase the efficiency of our power plants, but at the same time reduce the emissions down the road.

MR: Does the fact that NSP has to meet such high standards mean that you're developing technology that will later be helpful to other plants in the country?

MG: We have ended up that way, for that reason, as well as the fact that the management in this company has been willing to experiment and take some risks. We have ended up at the forefront of a lot of the technology
applications. The fluid bed project at Black Dog in Burnsville is currently the largest application of that type in the world. The dry scrubber banghouse that we put in the Riverside plant in Minneapolis was the first one in the United States. That was a European design that we wanted to experiment with and try out. We were also one of the first to make a major switch from high sulfur eastern coals to low sulfur western fuels. We worked with the boilers in our system and tried to get the mix of that low sulfur fuel as high as we could and cut down on sulfur emissions. So we are looked upon by the rest of the industry as a leader, and we do have a lot of people coming out to visit these facilities, because we have been in the forefront quite a bit.

MR: You had mentioned the increasing stress on groundwater pollution in Minnesota. How does that affect your operations?

MG: It's the old adage that nothing disappears. If you take it out of the air, then you're left with it somewhere. One of the major by-products of our processes is ash from the power plants, and where we have scrubbers, we either have a dry ash or a wet limestone sludge that we have to get rid of. In this case we're talking hundreds of thousands of tons per year—it's not just a couple of dump trucks. And all that ash has all of the metals and all of the elements in it that were in the coal; they got burned and then collected. So they do have some leachate of elements that come out of them, and we have to try and find ways to treat and dispose of that in a way that's not going to significantly affect the groundwater. So we're talking about sixty acre ponds lined with clay or rubber liners, trying to collect that leach and protect the groundwater.

MR: And what eventually can be done with that leachate? Is it just going to remain in a landfill situation?

MG: Well, the process we use now is either at a plant where we can use the water again, we just recycle the leachate back in and use it as a scrubber makeup. In places where we don't have that opportunity, what we do now is collect the leachate and then have the waste water treatment plant of a nearby city treat the leachate as they would any other sewage product coming out of the city. Those are the two main ways that it's taken care of now.

MR: How important are your nuclear plants in the total environmental picture? Does that take up a large part of your staff's time?

MG: Amazingly enough, it doesn't. Nuclear plants—the management and the regulatory issues associated with them—are mostly within the systems and the operations inside the plant—which means that the Nuclear Regulatory Commission is the main regulatory agency that they have to deal with. So most of the time is really spent by the Nuclear Utilities Division Group working with NRC on technical issues or regulatory issues. We get involved with a little bit of the environmental radiation monitoring their ambient samples, collecting cows' milk, things like that, around the plant. But other than that environmental monitoring for nuclear plants, there isn't very much. You hear a lot about it, but--

MR: Sure. It's more self-contained.

MG: It's more self-contained. In Minnesota they do have laws which
require licenses for spent fuel storage. So when we expand pools like we did at Prairie Island five years ago and are planning to do again, we have to go to the state for that. But everything else is done on the federal level and really doesn't affect operations.

MR: What are some of the future energy needs? How does that fit in with your environmental plan? For example, in the seventies when they were building the power lines across Minnesota, there was an emphasis on the expanded capacity for the future, which really has not panned out.

MG: Well, I think the energy need slowed down, partially due to conservation, partially due to a lot slower growth in the region. You know, Minnesota and the Dakotas and Western Wisconsin just haven't grown like California and parts of the Southwest. We also have the issue that as the energy prices grow up, people ultimately use less. That's probably more significant in the natural gas rate than electric, but all of those factors kept the logarithm down to about two percent per year. So our need for building plants has slowed down. But we're about at the point now where that process has to start again. So we're looking at things like whether to try and import more Canadian power from their hydroelectric facilities. It's a decision everybody is going to have to face up to in the next couple years.

MR: Does Minnesota's environmental regulations have an impact on what kind of decisions are made?

MG: It has an impact from the point of view that we have a very long and intense regulatory process for power plants or other additions that are made. You can usually count on three to four years once you start that process—if you're successful—before a large power plant is licensed. And that contrasts to a process, for instance in North Dakota, that's probably twelve to eighteen months. But there are other factors that a company of our size has to consider, like where are your energy needs? You don't want to locate the power plants too far from the energy needs or where you need more transmission capacity. What type of plant do you want to build? We're trying to do some design work now on more of a standardized unit and smaller modular that can be built faster, cut down on the construction time, save money, and also cut down on those lead times that carry so much uncertainty. If you can tell somebody that you think they will need a power plant in six years instead of ten years, you're probably going to come a lot closer to being right.

MR: Would more modular units also cut down on some of the regulatory paperwork?

MG: I don't know if it's going to change that very much. We don't build that many of them. This isn't the early seventies anymore, and so even if we cut back the size of the units to 200 to 400 megawatt size, I don't think they'd be done that fast. Most of the regulatory issues have to do with site location and local environmental effects anyway, so even if you have the same type of unit, you're still going to have to go through a long process.

MR: When you site a particular location—you mentioned the local communities—how do you face the fact that people want electrical power, but they don't want a plant in their neighborhood, in their backyard?
MG: The way you face that is you try to put together studies and rationale that show some reasonable process on trying to come up with locations, sites or choices. And then you try to show some choices and availability and then enter that into the process and see what happens. There just isn't any way to avoid it.

MR: You mentioned that plants have to be built fairly close to where the capacity is needed. Is that right?

MG: Yes. You have to either be close enough to enter into the major transmission grids or be somewhat close to where the power is needed. We wouldn't, for instance, want to build a plant in western South Dakota when really our load center is the Twin Cities and maybe parts of North Dakota and eastern South Dakota. You don't want to get too far away.

MR: Is part of it then looking at where development is being located and trying to make some predictions from that?

MG: Yes, you look where development is, where you think your future energy needs are going to be, what the cost of locating the plant or producing power in that area will be. Where you expect to get your fuel sources is an important item. Is coal going to come from Montana or Wyoming or North Dakota? So that makes quite a bit of difference. Fuel costs are one of our highest operating costs these days. We spend upwards of seven hundred million dollars a year just for coal.

MR: Do you think the reliance on western coal will be a long term trend that you could make some predictions based on that?

MG: We're pretty much in a situation where there are cost advantages to staying with western fuels. The sulfur content is low enough that it's environmentally an advantage. And we've had enough experience with burning. We know how to operate with western fuels. So I just think for NSP's system, that's the future for us. I don't see anything that's going to send us back to Illinois coal or some other fuel becoming our primary source.

MR: How do you work with other environmental groups like The Nature Conservancy and the Sierra Club? How do those kind of private organizations have an impact on what you do?

MG: Well, they have an impact because they have memberships, and depending on the issue they pick out, they're very active in that issue. When we decided to get into the processing and burning of municipal solid waste, the Sierra Club has always been pretty active in that, so we talked to their people and had some meetings with their committees that worked on it. I think you're foolish if you assume that those groups either aren't going to get involved or don't care or you can go through your process without talking to them. If you think you've got a good project or you're trying to do the right thing, I think it's still to your advantage to try to talk to them or make contact or at least have them understand your position and why you're trying to do something. They may ultimately decide they still don't like it, but at least you've gotten over the first hurdle where you're looking each other in the eye, and you're talking
about the issue—the actual point of view.

MR: So in essence you try to include them fairly early in the process rather than later?

MG: Yes. When we put together a project or make a decision on what we want to do, we try to also make lists of which groups need to be talked to, whether it's local government, the general public, environmental groups, regulatory agencies, or legislative people. It's just a normal process in the business these days. You can't avoid it.

MR: I know that Northern States Power has been involved in some major Nature Conservancy projects in helping them, for example, at Black Dog Fen. How did that come about?

MG: Through the development of our company's history, we own a lot of property, whether it's along the St. Croix River or down in the Minnesota River Valley or other places. As a result, it was just natural for groups like The Nature Conservancy or the U.S. Fish and Wildlife Service to look at putting together reserves or other things. You work with those groups. Part of the land down at the Black Dog plant down in Burnsville is part of that whole Minnesota valley area that the Fish and Wildlife Service has set aside and put trails on, and we've leased a lot of property to them. We've made some deals with The Nature Conservancy along the St. Croix. When you have a lot of property like that, you try to preserve some of it for the future. It's a good way to do it.

MR: What are some of the problems with having your plants located on the Mississippi River? Are there some particular regulations that have to be met?

MG: No. Plants on the Mississippi River, as long as you can deal with the issues of water appropriation—how much water you take—don't create unusual problems. The King plant located on the St. Croix River in Stillwater has probably been a more obvious issue just because of its location on a national scenic river. So we have to be sensitive to that and careful about the way we operate the plant and the way it looks, because that's a very scenic area. Places like that are probably more of an issue than the Mississippi.

MR: Are there some particular environmental concerns that you see in the future that are going to affect NSP's operations?

MG: Sulfur dioxide may not affect us so much as some of the other utilities, but I think there's going to be a continuing concern, whether it's specifically with acid rain or just with air pollution in general and trying to reduce sulfur dioxide really as much as possible. I think on the horizon is the issue of fossil fuel burning, whether it's dealing with the greenhouse effect or nitrogen oxide emissions or the ozone layer—that's going to keep coming back. And I think the regulators of public utilities are going to have to start talking about choices. If you produce electricity and you're not in a place where you can do it with wind power and hydro, you basically have a choice. You either burn coal or you use nuclear power. Most of our basic power comes from those two sources. And you can only do so much with conservation or other alternatives. If they start to get serious about reducing emissions and
pollutants that affect the CO2 issue in the greenhouse effect, then you're back to dealing with the nuclear issue. I don't think anybody wants to deal with that right now.

MR: So it's not necessarily your job, but it's part of NSP's job simply to educate the public by saying, "Hey, there's some choices we have to make up the road."

MG: Yes. And that's really the dilemma, I think, on the energy and environmental front that faces Minnesota and probably the rest of the United States—they're going to have to start to make choices. It's not just a matter of people saying, "Well, we don't want nuclear plants anymore, because we don't like nuclear waste, and the government hasn't resolved disposal of that waste yet, and we don't like coal plants because they have emissions to wrestle too, so we'll get rid of those." A lot of electricity is consumed.

Congress and the public and the regulators have to deal with that issue and then tell the utilities what their choice is. Fine, if they don't want anymore nuclear plants built, then there won't be, but something else will have to be built instead. We have three units that we're operating and have been operating for quite a few years. We've maintained them well and have good safety records—their availability and operation are some of the top-ranked in the country. So the units that we do have have worked well, and we're just going to continue with those for now and wait until the issue is dealt with.

MR: Obviously this will never supplant coal, but what about garbage burning plants? How's that project going?

MG: Well, we've currently got agreements with counties in the metropolitan area for taking care of almost three thousand tons per day of municipal solid waste. We've got a processing plant in operation in Newport. We're burning fuel product from that. The plant up in Elk River is under construction. I think it was good for us to get into that business, because ultimately we have enough experience with burning and incineration, whether it's coal or nuclear power or solid waste, plus we're a regulated industry in the state. We're kind of beholden to the public, and they have avenues to deal with us on issues, and we're used to being regulated probably more than any other industry in the state. So I think it'll work out well for both sides. The solid waste issue is another one problem. It's not disappearing anymore. It doesn't go under the ground.

MR: You're saying that rather than having, for example, a county operate a garbage burning plant, it's preferable to have NSP do so, since the regulatory mechanisms are already in place.

MG: The counties are ultimately responsible to the state in the regulatory structure. But I think the counties are finding that if they can find a responsible vendor and write a contract that's good for both sides, then they're not stuck with hiring a lot of people and trying to manage a process that they're not used to taking care of, because it is technical and does require some expertise. You know, we've been burning coal for fifty or sixty years. Burning fuel products from municipal solid waste isn't that much different. So I think they can save themselves a
lot of headaches, but at the same time have somebody that they can make responsible and hold within a contract. And I don't think there's anything wrong with that public/private partnership. I think it's good for companies and industries to get used to working with units of government and all of them trying to be responsible in helping deal with the problem.

MR: Are there by-products from solid waste burning that will cause problems down the road?

MG: I think there are by-products that have to be dealt with. It's obvious that when you burn either raw municipal waste or processed fuel, you have to make sure that your incineration is done with good combustion so that you don't have organics or the dioxin products produced. You have to have good collection of that air emission and good particle collection to keep the metals like lead and cadmium and other things out of the air stream. And then the ash from the municipal solid waste burning has to be taken care of properly. It's pretty much the same issue that we deal with with our ash from coal plants. They have things that leach out, which are a lot better than what leaches out of a solid waste landfill. That's what I see to be the big advantage in having good recycling programs and then combusting what's left, the by-products and things that have to be disposed of are much easier to control.

In solid waste landfills everything is just thrown in and you have no idea what's put in, and you won't know for twenty or thirty years. The kind of things that are going to leach out of the large landfills in the metro area are just going to keep changing and probably getting worse for the next hundred years. And as an advantage, part of the cost of solid waste disposal is you're producing energy from the garbage. I think any time a waste product of society can be turned into something useful and the waste products from that can be controlled, you're a lot better off. What we've found from the hazardous waste industry is that if it's done right, incineration is ultimately the best thing to do, because that way you have completely dealt with any organics or anything else that you can get out of a containment system. I think it's going to prove out to be the best way to go. As long as we can get people to be more responsible about separating their garbage and having to recycle it--trying to not just dump everything they have and not worry about it--then incineration and the rest of it is going to work.

MR: So once again it goes back to public education.

MG: Public education on municipal solid waste is a big challenge. You know, it's like the seat belt law. If you can get your kids to start wearing seat belts when they're five years old, then they're probably going to wear seat belts their whole lives. It's going to become automatic. And it's the same thing with garbage. If families and commercial industrial customers can start to separate their garbage and only put into the garbage can what they can't otherwise recycle, that part will get burned and landfilled properly, and we won't have as much to deal with, and costs will go down. But we've made it so easy for people the last twenty years. Garbage just disappears, and it was cheap too. It's not cheap anymore.

MR: So some of it is also going to have to come from public
agencies--for example, the Pollution Control Agency cracking down on industry that doesn't dispose of it.

MG: It will take the Pollution Control Agency making sure that landfill operations are run properly, counties and cities making sure that the true cost of taking care of that garbage is in people's garbage bill, and people understanding the advantages of recycling. It's not that you're going to end up with a separate can of tin, bottles and newspapers that you don't want, but you're going to help the system do a better job. If you talk to people who took care of their garbage back in the forties and fifties, that was automatic back then. They took the burnables out to their backyard, and the rest was separated out. Some of it they composted. We got away from that because we had these landfills--you didn't have to recycle anymore. It's got to change, and it will. It's getting expensive now, and it's getting peoples' attention. Almost every solid waste landfill in the state of Minnesota is on the super fund list. We're starting to understand a little bit more the consequences of our actions.

MR: Thank you, Mr. Gregerson.