

**2011 HOUSE ENERGY AND NATURAL RESOURCES**

**HCR 3033**

# 2011 HOUSE STANDING COMMITTEE MINUTES

## House Energy and Natural Resources Committee Pioneer Room, State Capitol

HCR 3033  
02/11/2011  
14381

☐ Conference Committee

Committee Clerk Signature



Minutes:

Rep. Porter: We will open the hearing on HCR 3033.

Duane Sand: I am representing myself in support of this resolution. My goal is to give you a historic update on the evolution of commercially nuclear power in the United States and the world in the last 30 years. (see attachment 1)

Rep. Brabandt: Is the Three Mile Island still in operation?

Duane Sand: Three Mile Island is in operation, it is dual unit plant. The reactor that had the mishap is shut down and the other one continues to operate.

Rep. Porter: Are there any other questions for Mr. Sand? Is there any further support for HCR 3033? Is there any opposition? We will close the hearing.

Rep. DeKrey: I move a do pass with a referral to place it on the consent calendar.

Rep. Kreun: Second

Rep. Porter: Is there any discussion? Voice vote taken motion carried. Carrier: Rep. DeKrey.

Date: 2-11-11  
Roll Call Vote #: 1

2011 HOUSE STANDING COMMITTEE ROLL CALL VOTES  
BILL/RESOLUTION NO. HCR 3033

House House Energy and Natural Resources Committee

Legislative Council Amendment Number \_\_\_\_\_

Action Taken: ☒ Do Pass ☐ Do Not Pass ☐ Amended ☐ Adopt Amendment  
☐ Rerefer to Appropriations ☐ Reconsider

Motion Made By Rep DeKrey Seconded By Rep Kreun

Representatives	Yes	No	Representatives	Yes	No
Chairman Porter			Rep. Hanson		
Vice Chairman Damschen			Rep. Hunsakor		
Rep. Brabandt			Rep. Kelsh		
Rep. Clark			Rep. Nelson		
Rep. DeKrey					
Rep. Hofstad					
Rep. Kasper					
Rep. Keiser					
Rep. Kreun					
Rep. Nathe					
Rep. Anderson					

Total (Yes) 15 No 0

Absent 0

Floor Assignment Rep DeKrey

If the vote is on an amendment, briefly indicate intent:

*voice vote taken to consent Calander  
motion carries*

**REPORT OF STANDING COMMITTEE**

**HCR 3033: Energy and Natural Resources Committee (Rep. Porter, Chairman)**  
recommends **DO PASS** and **BE PLACED ON THE CONSENT CALENDAR**  
(15 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). HCR 3033 was placed on the  
Tenth order on the calendar.

2011 SENATE NATURAL RESOURCES

HCR 3033

# 2011 SENATE STANDING COMMITTEE MINUTES

## Senate Natural Resources Committee Fort Lincoln Room, State Capitol

HCR 3033  
March 17, 2011  
Job #15620

☐ Conference Committee

Committee Clerk Signature

*Monica Spaulding*

### Explanation or reason for introduction of bill/resolution:

A concurrent resolution recognizing the indispensable role of nuclear energy to a comprehensive, integrated United States economic, energy security, and environmental strategy and supporting a host of federal and state policy initiatives to spur a new wave of nuclear plant development.

### Minutes:

Testimony Attached

**Chairman Lyson** opened the hearing on HCR 3033.

**Duane Sand**, spoke in support of HCR 3033. He had sent to the senators an op ad he had done for the Grand Forks Herald and the Fargo Forum. Currently 1% of all power generating facilities in America are nuclear, but nuclear supplies over 23% of all electrical needs in the United States. For the first time since 1979, the Nuclear Regulatory Commission gives licensing new construction of nuclear power plants both BWR (boiling water reactors) and PWR (pressurized water reactors) in the United States in Vogel, GA. These two new nuclear plants, called a dual unit BWR AP 1000 will generate approximately 2500 megawatts of clean electrical energy. It is just one of 17 applications that have been accepted by the Nuclear Regulatory Commission where he just finished a 2 year term working as an inspector for them in all nuclear power plants in the Midwest. Many of the companies who own nuclear power plants in America also own coal fired electrical generating companies. The closest example of that would be Xcel Energy in Minnesota. There are many reasons I think we should consider supporting the nuclear renaissance that is going on in America right now. We are going to be building more nuclear power plants in the years ahead anyway. We are going to be building another dozen in the next 15 years and we are going to have to build forty more in the next 50 years just to replace the currently operating nuclear power plants whose licenses are going to expire after 60 years of successful generation. Of all the good reasons I think we should have nuclear, obviously the number one is the potential it brings for jobs in our state. The first and foremost reason North Dakota is a prime site for a nuclear power plant is the seismic stability of North Dakota. Our state is as seismically stable as anywhere in America. The other potentially great thing is the use of the warm water to melt ice jams. The effluent water discharged from a plant could potentially greatly mitigate the Red River flooding. It is being done on the Illinois River to melt ice jams so the dams and locks can work properly. It has prevented

widespread human loss and suffering by preventing homes from flooding along that river. I think that is something we need to study here in North Dakota. Thirdly, nuclear power plants in Monticello and California and all across America already filter and purify all the water they take in. They do that because they don't want fouling of the tubes in the heat exchangers those condensers are condensing that steam coming out of the generators. One of the things I pointed out in that article that needs to be studied I believe as well in North Dakota is the potential to do that very same thing and have it meet the water quality standards that the Canadian government is so sensitive about. The last reason that I pointed out that we should consider nuclear power in North Dakota, specifically in the Red River Valley, is we all know that is the closest point to the eastern interconnection which is the major grid to the northeastern part of the United States. We already transmit power from North Dakota from right up the river at the coal station to Monticello, MN on DC power lines. AC power is even cheaper to transmit and can be done more efficiently from 200 miles closer.

**Senator Triplett:** I did read your editorial some weeks back in the Grand Forks Herald. It doesn't seem the warm effluent would work on north flowing rivers.

**Duane Sand:** That is a great question. We do not have all the answers, but I do believe we need to study it. Clearly, I believe the number is less than 5% of the effluent from the Dresden nuclear power station is used to melt ice on a river 5 times bigger than the Red River. I think that there is a great potential for a much larger percentage to be used. We also should consider a pipeline as well.

**Senator Triplett:** So the pipeline would have to go to the Hudson Bay where the river flows in and then start melting it backwards? Is that what you are thinking? Because if you melt it where a nuclear power plant is in North Dakota, all you are going to do is cause substantial flooding. That is the cause of the flooding on the Red River, it melts in ND before it melts in Canada and that is why we have floods that are so unpredictable that can cause lakes at any point along the river wherever it melts first. Unless you are planning to get that warm effluent to Hudson Bay and start warming it backwards, you are going to cause a problem, not prevent one.

**Duane Sand:** I disagree with that. Flooding is primarily caused by ice jams and ice jams are specifically what this effluent is so good at preventing. The maximum flow rates over the last 20 years for the Red River in January and February is about 1/3 of the feet per second flow rate that is used in everyday nuclear power electrical generation. If that water is put in in place of the water flowing under the ice which is what is being proposed, that water will continue to flow north under the ice, warming it as it melts it, as it comes in contact. Eventually it loses some of that specific heat capacity which is why another pipeline may be something we should study. I'm not saying it is the end all solution to this. I certainly know that even with the north flowing river toward more cold and more ice putting more warm water in the right place may be a solution that we should at least look at.

**Senator Burckhard:** Have you had any discussions with Xcel Energy about a proposed plant in the Fargo area?

**Duane Sand:** Yes, I have. The operations department for Xcel Energy is actually looking down the road in the next decade or two for new construction of nuclear power plants in their market. There is a ban on nuclear power construction in Minnesota. The Minnesota legislature, both the House and the Senate, have overturned that as of two weeks ago. It is on the governor's desk to overturn. Either way, what I am hoping to do this fall is have the first nuclear power symposium in ND to at least discuss these issues. Xcel Energy has said that they may be a stakeholder in that if other people agree to attend that symposium.

**Senator Burckhard:** Do you think the recent event in Japan will have any effect on the renaissance of nuclear energy that is coming?

**Duane Sand:** I certainly do. We simply can't turn our back to the second biggest electrical generating source in the world today. In fact we are far behind every industrialized country. Even countries like Lithuania are building nuclear power plants. Three Mile Island was significantly less than what happened in Japan last Friday. American people have shifted their focus from anti nuclear to more pro-nuclear. That has changed by roughly 33% favored nuclear power after Three Mile Island in 1979 to about 67% in favor of nuclear power 30 years later.

**Senator Burckhard:** Many years ago they were supposed to have a solution for spent nuclear fuel. What is your forecast of that?

**Duane Sand:** US Congress passed a law in the 70's or 80's that basically said that all commercial nuclear power owned utilities will pay for and did pay for about 13 billion dollars worth of research and development of the Yucca Mountain Long Term Storage facility. With the stroke of a pen about 1 ½ years ago the Dept. of Energy changed course. That case will be tried soon in the US Supreme Court. It was the Dept. of Energy making the decision; that's not the law of the land. In anticipation of a longer wait, about 10 years ago the nuclear regulatory commission came up with a short term solution which is actually a 40 year solution. That is the temporary storage they call it even though it is 40 years. Fuel assemblies are stored in reinforced concrete metal containers on site on about half of the nuclear generating plants in America. I believe that solution is very safe. It is short term but it is 40 years short term. In fact both nuclear power plants in Minnesota, Monticello and Prairie Island, utilize that storage capacity.

**Senator Schneider:** You mentioned siting the facility in eastern North Dakota so you could be closer to the grid. The reason we haven't fully developed our wind power potential here in North Dakota is because that grid essentially is unavailable to us in a way that would allow us to get our wind energy to market. Would a nuclear facility if sited and operational, compete for space on the grid with wind energy?

**Duane Sand:** I do not believe so. There are a couple reasons why. Number one, the grid can only be powered by base loading capable electrical generating stations. We know that coal can do that and provides about 70+% of all our electrical generating needs in the country. And we know that nuclear can do that as can some hydro in some other parts of the country. Wind can't be base loaded and as a result the eastern interconnection as it is the major grid for the northeastern United States as opposed to the western



interconnection. Those can't be base loaded so there is no competition for them. Just as a note, it takes about 600 windmills at full capacity to equal one nuclear power plant.

**Senator Triplett:** How much water would be required for a nuclear plant of the type you are envisioning? First tell us what size of plant you are envisioning, and then the requirement for water with the pressurized water reactor versus with the boiling water reactors.

**Duane Sand:** Many if not most of the nuclear power plants in America are not near a major lake or river. Usually the plants have manmade cooling lakes which are initially filled up to operate. In ND a cooling lake would require 900-1000 acres near the Red River.

**Senator Triplett:** So you would take 900-1000 acres and dig it to 12-15 feet deep?

**Duane Sand:** Yes, we would dig down and build levees for some of it. A plant of that size would use approximately 1.6 billion gallons /day of cooling water. That would enable the reactor to operate at 100% capacity. The water would be recycled through the plant, to the lake, cool off, come back. That process is less than one per day.

**Senator Uglem:** Can't plants be rebuilt rather than building a new one?

**Duane Sand:** The plants need to be disassembled. It is metallurgical. The materials need to be disassembled. When the plants are disassembled, the area is reclaimed back to its natural condition.

## Opposition

**Karen Van Fossan,** representing the ND Peace Coalition, presented written testimony in opposition to HCR 3033. See **Attachment #1**.

**Senator Burckhard:** What form of energy is safe, secure, economically beneficial, and sustainable?

**Karen Van Fossan:** In my opinion there are a lot of potential sources we could study, wind energy, solar energy, and biomass. There may be other forms we have not even conceived of.

**Senator Triplett:** Could we call Mr. Sand to the stand? In my thinking, nuclear power is best situated near its markets. As a state we export energy. There is always a loss of energy in the transmission process. How much is lost in the transmission process?

**Duane Sand:** Ideally the shortest distance possible is best. You want to minimize hysteresis losses. Those are losses caused by friction in electrons flowing. There is a lot of loss on the 350 mile ride to Monticello. It's not just the length of the ride, but it's also because it is DC and DC losses are much higher. The reason why the North American Association of Electrical Engineers and those kinds of groups are supporting more construction of nuclear power plants, besides the concerns that it is better for the environment as far as carbon issues are concerned, is that they produce a very high voltage AC which minimizes any losses. To give you an example of real estate in the

United States, since the nuclear industry first started in the early 50's and a lot of plants were located in the southeast, now we are having to rethink that, not just because of the event in Japan last Friday but because since the 1950's we have had some very big seismic activity from the New Madrid Earthquake fault line which runs all the way from Memphis, TN into southern Illinois. In fact they have had earthquakes 4-6 on the Richter scale that are being felt in Minneapolis and at the Prairie Island Nuclear Power Plant in Minnesota. ND is seen as a supplier of energy. Anything AC would be better than DC.

**Senator Triplett:** What would be your estimation of the % of power lost by transmission of the energy as opposed to having it produced near to a major metropolitan area?

**Duane Sand:** I would be glad to find that % and email you. I'm sure it is in the single digits or even 1% loss for high voltage, AC electricity transmission.

**Carol Kitko** spoke in opposition to HCR 3033. She urged a Do Not Pass. No one has yet solved the problem of nuclear waste or the other problems relating to nuclear power. It poses health and environmental hazards. The crisis in Japan is ongoing and may eventually affect us. We feel we have no seismic shifts here so we think it doesn't pose a threat for us, but things change! The European Union has called for reconsideration of the 27 nation block energy policy. Europe is looking at the power plants they have in operation. She would rather take a watch and see approach. She feels people are unaware of this resolution being considered. People she spoke to are opposed to it. Let's work at solving the problems with oil and gas development, and look into wind and solar power.

**Chairman Lyson** closed the hearing on HCR 3033.

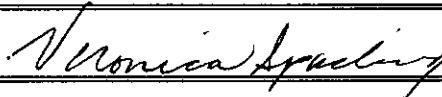
# 2011 SENATE STANDING COMMITTEE MINUTES

Senate Natural Resources Committee  
Fort Lincoln Room, State Capitol

HCR 3033  
March 25, 2011  
Job #15998

☐ Conference Committee

Committee Clerk Signature



## Explanation or reason for introduction of bill/resolution:

A concurrent resolution recognizing the indispensable role of nuclear energy to a comprehensive, integrated United States economic, energy security, and environmental strategy and supporting a host of federal and state policy initiatives to spur a new wave of nuclear plant development.

## Minutes:

No Attachments

**Chairman Lyson** opened the discussion on HCR 3033.

**Senator Triplett:** Do Not Pass motion

**Senator Schneider:** Second

**Senator Triplett:** If you intend to pass this, I would ask that you consider deleting the references to North Dakota. It is a fairly well written resolution but by encouraging nuclear production facilities within the state of North Dakota and specifically in the Red River Valley where the river flows north, and I know this is not going to alleviate the flooding. This is not flood protection for the Red River Valley. We don't have a need for additional energy in the state. We already export energy from North Dakota. There are transmission losses and almost all nuclear energy plants are placed very close to their market. We don't have a market in North Dakota. If the Do Not Pass fails, then I hope we could consider removing the references to North Dakota.

**Roll Call Vote:** 6-1-0

**Carrier:** Senator Triplett

Date: 3-25-11  
Roll Call Vote # 1

2011 SENATE STANDING COMMITTEE ROLL CALL VOTES  
BILL/RESOLUTION NO. 3033

Senate Natural Resources Committee

Legislative Council Amendment Number \_\_\_\_\_

Action Taken: ☐ Do Pass ☒ Do Not Pass ☐ Amended ☐ Adopt Amendment  
☐ Rerefer to Appropriations ☐ Reconsider

Motion Made By Triplett Seconded By Schneider

Senators	Yes	No	Senators	Yes	No
Chairman Lyson	✓		Senator Schneider	✓	
Vice-Chair Hogue	✓		Senator Triplett	✓	
Senator Burckhard		✓			
Senator Freborg	✓				
Senator Uglem	✓				

Total (Yes) 6 No 1

Absent 0

Floor Assignment Triplett

If the vote is on an amendment, briefly indicate intent:

**REPORT OF STANDING COMMITTEE**

**HCR 3033: Natural Resources Committee (Sen. Lyson, Chairman)** recommends **DO NOT PASS** (6 YEAS, 1 NAYS, 0 ABSENT AND NOT VOTING). HCR 3033 was placed on the Fourteenth order on the calendar.

2011 TESTIMONY

HCR 3033

Attachment 1

# The Opinion page

Your views. Our views.

Views from across the world.

February 6, 2011

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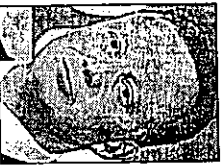
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## Viewpoint

# Valley nuclear plant could power huge benefits

By Duane Sand

**BISMARCK**—There are more than 17,000 generating facilities across America that make the electricity we need as a nation. And although only 104 of those facilities (fewer than 1 percent) are nuclear power plants, they produce 20 percent of our total electricity supply and more than 70 percent of the electricity generated in the U.S. by carbon-free sources.



Sand

Last year, the U.S. Environmental Protection Agency determined that at least 180 new nuclear power plants will be needed by 2050 to achieve our nation's environmental and energy goals.

The U.S. already has 104 nuclear plants. Why do we need so many more? The answer is based on three factors: replacing aging carbon-emitting power plants, replacing existing nuclear power plants that will close and meeting new demand for electricity.

Add to that the facts that there never has been a single fatality caused by a commercial nuclear power accident in America is the only industrialized country not aggressively building more nuclear capacity.

catch up with the rest of the world.

By 2050, virtually all of the nuclear plants operating today are to be retired. Because nuclear plants generate continuous electricity, intermittent generators such as wind and solar cannot effectively replace them. More than 70 new and bigger capacity nuclear plants will be needed just to replace the existing fleet.

So, how about building them in North Dakota?

I believe we need to start this public debate by proposing a nuclear power plant in the Red River Valley.

Why there? Several reasons, but I'll list just four.

- Title 10 of the U.S. Code governs the regulatory requirements owners of nuclear power plants must follow to safely protect both people and the environment. North Dakota is an ideal location for several reasons, and not as it relates to population either; rather, seismic stability and low air traffic density.
- Combine that fact with the valley's proximity to the eastern interconnection, and you have a viable and more economical way of transmitting electricity.
- Jobs. Jobs. Jobs. By that, I mean thousands!

The four-year construction project alone would require thousands of workers. And a fully operational dual-unit power plant employs more than 800 highly paid workers.

out the additional hundreds of jobs created to support those jobs.

I have inspected many of the nuclear power plants in the Midwest, and what struck me most about how different states use these assets.

There was one that stood out: the Dresden Nuclear Generating Station near Morris, Ill. There, the state of Illinois, U.S. Army Corps of Engineers and Exelon Corp. (owner of Dresden) use the warm effluent water of the plant to melt ice on the Illinois River. This helps prevent two things: Damage that the ice could do to downstream locks and dams AND widespread property loss and human suffering caused by flooding of homes upstream of the plant.

With more than 30 billion BTUs of thermal energy dissipated in roughly 1.6 billion gallons per 24-hour period of circulating water, we have the potential to "unclog the drain" known as the Red River well before the full spring thaw occurs. This is something that needs further study in North Dakota.

Most people think you must build a reactor plant next to a major river or large lake or ocean. Not so. Many plants around the country use man-made cooling lakes that range in size up to a thousand acres.

True, access to surplus water always is a plus. And so using already filtered and treated nuclear effluent water from Nevada

its Lake via the Sheyenne River is something the Canadians may not oppose so much because they also would have access to a large, base-load-capable AC power supply.

Last but not least, the U.S. Nuclear Regulatory Commission already has approved new applications for construction of next generation nuclear power plants for the first time in 30 years. And they are actually building at Vogtle, Ga.

The fact is that we are going to build dozens more nuclear power plants in America over the next few decades. Why not in North Dakota? These jobs can't be out-sourced to other countries and would greatly boost our economy.

In a future column, I will address the licensing process with state and federal governments and options that would encourage the \$10 billion to \$14 billion investment in a new nuclear power plant.

A graduate of the U.S. Naval Academy, Sand served as a nuclear submarine officer in the Navy and worked as a reactor engineer with the U.S. Nuclear Regulatory Commission. In North Dakota, he was a Republican candidate for U.S. Senate in 2000 and for U.S. House in 2004 and 2008.

Sand is the founder of the Build Nuclear in North Dakota Now Foundation.

#1  
March 11, 2011

Chair Lyson and Members of the Senate Natural Resources Committee:

My name is Karen Van Fossan, and I am here this morning on behalf of the North Dakota Peace Coalition.

The North Dakota Peace Coalition recommends a Do Not Pass on HCR 3033. The Peace Coalition recognizes the value of calling for "safe, secure, and economically beneficial" development; however, the Coalition feels these principles are more easily said than done when it comes to an energy source as troubling and controversial as nuclear power. The Coalition recommends a Do Not Pass because North Dakota is not in a position to encourage or take on another large scale, high impact form of energy development. Only now is the state becoming aware of the full impact of oil and gas development in western North Dakota, as testimony earlier this morning suggested. Our state cannot begin to be prepared to deal with the potential consequences of an industry like nuclear power.

The Peace Coalition supports economic development that is safe, secure, economically beneficial, and sustainable. Even now, as North Dakota continues to have difficulties disposing of produced water from the hydraulic fracturing process, our state is in no position to deal with the monumental challenges of nuclear waste.

Members of the Peace Coalition board have carefully reviewed this resolution, and they see no language which states that communities need an opportunity to voice their concerns about potential nuclear power plants or nuclear waste disposal sites in the vicinity of their homes, farms, and places of business. They see virtually no wording in the resolution that even begins to acknowledge the serious questions about safety and security regarding nuclear power and nuclear waste. We North Dakotans need a more balanced and thoughtful approach that openly recognizes the potential positive and negative outcomes regarding any industrial process. There is no need for our state to jump with both feet into promotion of an industry that most communities in our country would seriously question and certainly not welcome without some thorough research.

We all need more information, deliberation, and discussion to make wise decisions as a citizens in our breathtakingly beautiful state regarding economic development and energy industries. HCR 3033 does not set up a mechanism for real community exploration regarding the positives and negatives of an industry like nuclear power. We need this open discussion before our elected leaders can even begin to consider a resolution promoting nuclear power development in North Dakota.

Because of these serious shortcomings, the North Dakota Peace Coalition recommends a Do Not Pass on HCR 3033. Thank you.