Ballot Initiative #1: Nuclear Waste Disposal

Cooperative Extension South Dakota State University

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Nuclear waste disposal

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Ballot initiative #1:

Nuclear waste disposal

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South Dakota voters will participate in our state’s major decisions on nuclear waste disposal at the polls in November.

Contrary to what some people may believe, a “yes” vote on this ballot initiative is not a vote for nuclear waste disposal and a “no” vote is not a vote against nuclear waste disposal.

The ballot initiative is a proposal to require future voter approval for activities related to (1) nuclear waste disposal in South Dakota and (2) participation in nuclear waste disposal compacts with other states.

A “yes” vote gives the final approval or rejection authority to voters in a future election. A “no” vote leaves approval or rejection authority in the hands of the legislative and executive branches of state government.

Content of the initiative

There are four sections in the initiated measure that will be on the ballot.

Section 1 contains the following concepts:
• Requires voter approval for the disposal of low-level or high-level nuclear waste in South Dakota.
• Requires voter approval for joining South Dakota to any compact with other states for joint disposal of low-level or high-level nuclear waste. (Presently there are no proposals to develop a high-level nuclear waste disposal site in South Dakota. The discussion has centered around development of a low-level site at Igloo, SD.)
• Requires that such a vote shall not take place until all of the following three conditions are met:
  1) An application for waste disposal or for joining a multi-state compact must be submitted to the Secretary of State.
  2) A summary of the application must be published by the Secretary of State in generally circulated South Dakota newspapers, with the cost to be paid by the applicant.
  3) At least seven hearings must be conducted around the state by a neutral party appointed by the Secretary of State, with the cost to be paid by the applicant.

Section 2 exempts from this law those South Dakota entities that both generate and store their own nuclear waste on site and whose purpose is not to dispose of nuclear waste. (South Dakota hospitals, business firms, and research institutions that annually generate 6 cubic feet of low-level nuclear waste would be exempt from this law.)

Section 3 includes administrative conditions:
• The law becomes effective immediately and also retroactively back to January 1, 1983.
• If any part of this law is judged to be invalid, all other valid parts that are separable shall remain in effect.
• If any part of this law is judged to be invalid for a specific application, the part shall remain valid for other applications, wherever possible.

Section 4 includes the following definitions of terms:
• “Low-level nuclear waste” is defined by the Federal Low-Level Radioactive Waste Policy Act of 1980 as all nuclear waste that is not legally defined as high-level waste.
• “High-level nuclear waste” is defined by the Federal Nuclear Waste Policy Act of 1982 as transuranic waste and includes spent nuclear fuel and other materials from power plants, and certain byproducts from processing nuclear weapons. (Generally, high-level waste emits a higher level of radiation than low-level waste. Different procedures are legally required in transportation and disposal.)
• “Disposal” means the short-term disposition or permanent disposition of low-level or high-level nuclear waste.
• “Application” means a proposal detailing the applicant’s plans; objectives; operating procedure; social, environmental, and economic impact; and ultimate financial liability.
• “Applicant” means one of the following three entities:
  1) An individual, partnership, corporation, or other entity in the case of disposal of low-level nuclear waste.
  2) The U.S. Secretary of Energy in the case of South Dakota being selected for
high-level nuclear waste disposal.
3) The state legislature
   together with the governor
   in the case of a proposed
   compact with other states.
   • “Election” means the next
     regularly scheduled statewide
     general election unless a
     special election is warranted
     to meet legal deadlines
     imposed by federal law.

What the initiative does
and does not do

Passage of this initiative does
not prohibit the location of a
nuclear waste disposal site in
South Dakota or the joining of a
multi-state nuclear waste disposal compact. On the other
hand, defeat of this initiative
does not guarantee that a
disposal site will be located in
the state.

Passage of this initiative gives
voters the opportunity to
approve or reject disposal and compact applications in the
future. In addition, future voters
receive an implicit ability to
approve or reject procedures,
revenue charges, and
regulations adopted by state
officials prior to the filing of any
future application. Third,
passage would likely increase
the application cost and the
number of procedural “hoops”
that future applicants are
required to “jump” through to
receive a disposal or compact
permit.

Defeat of this initiative allows
elected representatives and
state officials to accept or reject
disposal applications and multi-
state compacts, without direct
voter approval. In addition,
elected representatives and
state officials could adopt
procedures, revenue charges,
and regulations for disposal
prior to future applications
without an implicit voter
approval or rejection question in
the next election. Voters would
maintain an indirect voice of
approval or rejection of
applicants and waste policy by
selecting the elected officials in
following elections.

In the final analysis, the
voters’ access to information,
exposure to interest groups, and
right to express preferences will
be weighted against an
appraisal of elected
representatives’ access to
information, exposure to interest
groups, and responsibility to
express preferences. The
decision on who should have the
final say on disposal—voters or
elected representatives—is a
value judgment that will be
made by the voters in
November.

Additional information

The following questions and
answers provide additional
perspectives on the nuclear
waste disposal issue. The facts
and uncertainties are presented
without promoting a particular
viewpoint.

1. Why has nuclear waste
disposal become a public issue?

First, the amount of nuclear
waste has been increasing since
the 1950s. The nation annually
produces 3.4 million cubic feet
of waste, and it will likely be
more by the year 2000.

Second, Congress passed the
Low-Level Radioactive Waste
Policy Act in 1980. This Act
requires all states to have a
plan for low-level waste disposal
by January 1, 1986. This Act
forces all states to choose
among (1) providing for in-state
disposal of waste generated
within its borders, (2) joining a
multi-state compact to dispose of
a state’s own waste in another
state, or (3) building an in-state
disposal site that would
accommodate waste of other
states.

South Dakota typically
generates 6 cubic feet of low-
level nuclear waste per year
and is the third smallest
producing state. New York is
number one with 281,000 cubic
feet annually produced. It is
uneconomical to develop a
trench disposal site for only 6
cubic feet of waste. Possible
alternatives include long-term
on-site storage.

It is unclear what happens if
South Dakota has no plan
adopted by January 1, 1986. The
federal government may not act
immediately in 1986. Federal
action may depend on solving
the disposal method disputes
and on whether we have made
progress in our state’s planning
efforts. On the other hand, the
federal government might
immediately withhold dollars or
declare South Dakota as a
waste disposal site.

2. What is low-level nuclear
waste?

Low-level nuclear waste is
legally defined as radioactive
waste that is not high-level
waste. There are different
procedures and requirements
for handling and disposal of the
two types of waste because
each possesses a different set of
risks to human health.

According to various sources,
low-level nuclear waste includes
glassware, protective clothing,
used medical and industry
equipment and hardware, used
piping and wiring, building
rubble, residue from dried
liquids, filter sludges, animal
carcasses, and resin beads.

According to the League of
Women Voters, 52% of the low-
level waste is generated by
nuclear power plants, 33% by
hospitals and industry, and 14% by research and other
institutions. Presently, such
waste is stored on-site or is disposed of at three sites across the nation.

3. Is low-level nuclear waste hazardous to human health?

According to various medical sources, certain types of low-level waste are more dangerous than others. Most low-level waste does not emit a lethal dose of radiation. However, certain types of low-level waste elements can be lethal. The Nuclear Regulatory Commission (NRC) requires different procedures for handling the more hazardous low-level waste.

The NRC and medical sources suggest that if proper handling procedures are used and if accidents that result in continued exposure to low-level radiation do not occur, then there is a low "estimated health risk" to the public and the medically "estimated health risks" from drinking, smoking, or traffic accidents would be much higher.

4. What are the risks associated with disposal at Igloo?

Heavy-duty trucks and radiation resistant containers are used to transport low-level nuclear waste. These containers are designed to withstand most collision accidents without exposing their contents. So, the public is generally not exposed to radiation above legal standards, as long as major accidents do not occur.

State government could impose additional requirements and handling procedures. For example, prudent judgment may require that waste not be transported during severe weather conditions or on hazardous routes and that liability insurance would be carried to "adequately" cover measurable costs from potential accidents.

Most of the uncertainty surrounding the low-level nuclear waste issue is associated with the waste disposal methods and site. The radioactive life of some low-level materials lasts beyond 300 years. For obvious reasons, we are unable to test the alternative disposal methods under actual conditions. So, there is disagreement over the "best" method.

The disposal containers may not prevent leakage or migration of radioactive waste beyond 50 years. Therefore, the site geology and environment are studied, and built-in sensors are used to monitor waste migration after disposal.

The Igloo site has some initial characteristics that may reduce the risk of waste migration compared to other sites across the nation. There is sparse population, low rainfall, a low water table with aquifers 800 and 3,000 feet below the surface, and a thick layer of shale that may help to prevent seepage.

However, if further testing indicates cracks or fissures in the shale, then the waste migration protection provided by the shale would be debatable. Analysis will not be completed for some time after the November ballot. In addition, independent tests could be conducted by the state.

5. What are the economic impacts?

Chem-Nuclear paid for an economic study to be conducted, assuming that South Dakota would impose requirements that are similar to those imposed at Chem-Nuclear's Barnwell, SC, site. In the absence of an independent study, the Madden/Chem-Nuclear study has been reviewed. The following points of the analysis are helpful for informative purposes.

The local impact on Fall River County is estimated to be 112 additional jobs, of which 73 are locally hired while 39 are hired out of the region. Additional payroll would be $1.86 million which would add $1.58 million to local disposable income. Finally, the sales and property tax revenue base would be increased by 10 to 15% county-wide.

The impact on state government finances is estimated to be $135 thousand for a license fee to cover the "full" cost of the state regulators and waste monitors. A tax of $2.50 per cubic foot would annually raise $2.5 million for a perpetuity trust fund that would provide for costs incurred by the state after the site is closed or if accidents occur. The study estimates that more than $280 million would be in the fund when the site is closed, assuming no withdrawals. Another tax of $4.00 per cubic foot would annually raise $4 million and would increase state tax revenues by 1 to 2%.

The combined annual state and local government revenue surplus over costs is estimated to be $4.7 to $7.2 million, depending on whether the perpetuity fund is used or not. Again, the charges are based on fees imposed by the state of South Carolina. South Dakota may pick higher or lower rates.

Three additional potential costs are more difficult to accurately estimate. With a monthly average of 300 trucks destined to Igloo, an adequate road system is warranted for safety purposes.

Presently, more than 20 miles of road to Igloo may require straightening and major
improvements to handle the increased traffic in a safe manner. No public figures are available on the potential cost. However, recent highway building costs range from $0.5-$1 million per mile. So, $10 to $20 million in initial highway costs might be added.

Second, the risk of costs from potential waste migration is a hotly debated topic. Three of the six original national low-level disposal sites are presently closed due to leaks. Once a leak is found, controlling and monitoring it can be costly.

It must be pointed out that high rainfall and high water tables at these sites are very different from Igloo's characteristics. However, if the remote possibility of severe waste migration does occur, predetermined state requirements for insurance and trust funds may or may not be enough. Proposed levels presently suggested include user-paid insurance coverage at $100 million and a perpetuity fund that starts at zero and increases $2.5 million per year.

Third, some have raised the issue of economic impact on neighboring tourism in the Black Hills. Again, no figures are available. Presumably, there would be little, if any, impact on tourism, provided that no major accidents occur. However, if the remote possibility of severe waste migration does occur, it is likely to capture the attention of the media.

6. Who is Chem-Nuclear?

Since 1982, Chem-Nuclear has been a subsidiary of Waste Management Inc., Oak Brook, IL, which is among the nation's largest chemical waste disposal firms.

Recent articles in Newsweek and Wall Street Journal have reported on alleged irregularities by Waste Management Inc. in the management of toxic waste disposal sites in seven states.

It must be pointed out that allegations do not constitute guilt and these alleged practices have not been associated with nuclear waste disposal or the Chem-Nuclear subsidiary. Waste Management also has admitted no wrong doing, but did agree to pay $10 million in fines and site improvements after an out-of-court settlement. In recent forums on the nuclear waste issue, some have suggested that this points to the need for state government to develop a capable monitoring and enforcement system so that the state's interests are protected if South Dakota decides to accept a disposal site.

In summary, beliefs and opinions on nuclear waste disposal will influence the vote in November, even though the ballot measure will not guarantee or prevent disposal in South Dakota. This fact sheet covers the basic facts and uncertainties so that voters might make more informed judgments.