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United States Nuclear Regulatory Commission
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NUREG-1437
Supplement 47, Vol.2

Generic Environmental Impact Statement for License Renewal of Nuclear Plants

Supplement 47

Regarding Columbia Generating Station

Final Report Appendices

Office of Nuclear Reactor Regulation

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ABSTRACT

This final supplemental environmental impact statement (SEIS) has been prepared in response to an application submitted by Energy Northwest to renew the operating license for Columbia Generating Station (CGS) for an additional 20 years.

This final SEIS includes an analysis that evaluates the environmental impacts of the proposed action and alternatives to the proposed action. Alternatives considered include replacement power from new natural gas-fired combined-cycle generation; new nuclear generation; a combination alternative that includes some natural gas-fired capacity, energy conservation, a hydropower component, and a wind-power component; and not renewing the license (the no-action alternative).

The U.S. Nuclear Regulatory Commission's (NRC) recommendation is that the adverse environmental impacts of license renewal for CGS are not great enough to deny the option of license renewal for energy-planning decisionmakers. This recommendation is based on the following:

- the analysis and findings in NUREG-1437, Volumes 1 and 2, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS)
- the Environmental Report submitted by Energy Northwest
- consultation with Federal, state, and local agencies
- the NRC's environmental review
- consideration of public comments received during the scoping process and draft SEIS comment period

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EXECUTIVE SUMMARY

Background

By letter dated January 19, 2010, Energy Northwest submitted an application to the U.S. Nuclear Regulatory Commission (NRC) to issue a renewed operating license for Columbia Generating Station (CGS) for an additional 20-year period.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 51.20(b)(2), the NRC notes that a renewal of a nuclear power reactor operating license requires preparation of an environmental impact statement (EIS) or a supplement to an existing EIS. In addition, 10 CFR 51.95(c) states that the NRC shall prepare an environmental impact statement, which is a supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS).

Upon acceptance of Energy Northwest's application, the NRC staff (staff) began the environmental review process, described in 10 CFR Part 51, by publishing a Notice of Intent to prepare a supplemental EIS (SEIS) and conduct scoping. In preparation of this SEIS for CGS, the staff performed the following actions:

- conducted public scoping meetings on April 6, 2010, in Richland, Washington
- conducted a tribal outreach meeting on April 27, 2010, in Richland, Washington
- conducted a site visit at the plant in June 2010
- reviewed Energy Northwest's Environmental Report (ER) and compared it to the GEIS
- consulted with other agencies
- conducted a review of the issues following the guidance set forth in NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal"
- considered public comments received during the scoping process and comment period on the draft SEIS

Proposed Action

Energy Northwest initiated the proposed Federal action—issuing a renewed power reactor operating license—by submitting an application for license renewal of CGS, for which the existing license, NPF-21, will expire on December 20, 2023. The NRC's Federal action is the decision whether to renew the license for an additional 20 years.

Purpose and Need for Action

The purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy-planning decisionmakers, such as state, utility, and, where authorized, Federal agencies (other than NRC). This definition of purpose and need reflects the NRC's recognition that, unless there are findings in the safety review required by the Atomic Energy Act or findings in the National Environmental Policy Act (NEPA) environmental analysis that would lead the NRC to reject a license renewal application, the NRC does not have a role in

the energy-planning decisions of whether a particular nuclear power plant should continue to operate.

If the renewed license is issued, the appropriate energy-planning decisionmakers, along with Energy Northwest, will ultimately decide if the plant will continue to operate based on factors such as the need for power. If the operating license is not renewed, then the facility must be shutdown on or before the expiration date of the current operating license—December 20, 2023.

Environmental Impacts of License Renewal

The SEIS evaluates the potential environmental impacts of the proposed action. The environmental impacts from the proposed action are designated as SMALL, MODERATE, or LARGE. As set forth in the GEIS, Category 1 issues are those that meet all of the following criteria:

- The environmental impacts associated with the issue is determined to apply either to all plants or, for some issues, to plants having a specific type of cooling system or other specified plant or site characteristics.
- A single significance level (i.e., SMALL, MODERATE, or LARGE) has been assigned to the impacts, except for collective offsite radiological impacts from the fuel cycle and from high-level waste and spent fuel disposal.
- Mitigation of adverse impacts associated with the issue is considered in the analysis, and it has been determined that additional plant-specific mitigation measures are likely not to be sufficiently beneficial to warrant implementation.

SMALL: Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE: Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE: Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

For Category 1 issues, no additional site-specific analysis is required in this SEIS unless new and significant information is found. Chapter 4 of this report presents the process for finding new and significant information. Site-specific issues (Category 2 issues) are those that do not meet one or more of the criteria for Category 1 issues; therefore, an additional site-specific review for these nongeneric issues is required, and the results are documented in the SEIS. The staff has reviewed Energy Northwest's established process for identifying and evaluating the significance of any new and significant information on the environmental impacts of license renewal of CGS. Neither Energy Northwest nor the NRC identified information that is both new and significant related to Category 1 issues that would call into question the conclusions in the GEIS. This conclusion is supported by the NRC's review of the applicant's ER, other documentation relevant to the applicant's activities, the public scoping process and substantive comments raised, consultations with Federal and state agencies and Native American tribes, and the findings from the environmental site visit conducted by the staff. Further, the staff did not identify any new issues applicable to CGS that have a significant environmental impact. The staff, therefore, relies upon the conclusions of the GEIS for all Category 1 issues applicable to CGS.

Table ES-1 summarizes the Category 2 issues applicable to CGS, as well as the staff's findings related to those issues. If the staff determined that there were no Category 2 issues applicable for a particular resource area, the findings of the GEIS, as documented in Appendix B to Subpart A of 10 CFR Part 51, stand.

Table ES-1. NRC conclusions relating to site-specific impact of license renewal

Resource area	Relevant Category 2 issues	Impacts
Land use	None	SMALL
Air quality	None	SMALL
Surface water resources	None	SMALL
Groundwater resources	None	SMALL
Aquatic resources	None	SMALL
Terrestrial resources	None	SMALL
Special status species & habitats	Threatened or endangered species	SMALL
Human health	Electromagnetic fields-acute effects (electric shock)	SMALL
Socioeconomics	Housing Impacts Public services (public utilities) Offsite land use Public services (public transportation) Historic & archaeological resources	SMALL

With respect to environmental justice, the staff determined that there would be no disproportionately high and adverse impacts to these populations from the continued operation of CGS during the license renewal period. Additionally, the staff determined that no disproportionately high and adverse human health impacts would be expected in special pathway receptor populations in the region as a result of subsistence consumption of water, local food, fish, and wildlife.

The staff considered groundwater contamination as potentially new and significant information. Elevated concentrations of tritium have been observed in groundwater adjacent to the CGS site. However, the highest concentrations, up to 17,400 picocuries per liter (pCi/L), have been found in an upgradient well, MW-5, and have been attributed to Department of Energy Hanford Site operations. Elevated conductivity and concentrations of chloride and sulfate have also been detected adjacent to the CGS site and have been attributed to the infiltration of circulating cooling water that entered the soil through drywells. However, these elevated concentrations have not affected the groundwater used for drinking water; therefore, the staff concludes that there are no significant impacts associated with groundwater contamination at CGS.

Severe Accident Mitigation Alternatives

Since Energy Northwest had not previously considered alternatives to reduce the likelihood or potential consequences of a variety of highly uncommon but potentially serious accidents at CGS, NRC regulation 10 CFR 51.53(c)(3)(ii)(L) requires that Energy Northwest evaluate severe accident mitigation alternatives (SAMAs) in the course of the license renewal review. SAMAs are potential ways to reduce the risk or potential impacts of uncommon but potentially severe accidents and may include changes to plant components, systems, procedures, and training.

The NRC reviewed Energy Northwest's evaluation of potential SAMAs. Based on the review, the NRC concurs with Energy Northwest's identification of 16 potentially cost-beneficial SAMAs. One of them was aging-related and has already been implemented by Energy Northwest. For the other 15 potentially cost-beneficial SAMAs, the staff concludes that they do not involve aging management of passive, long-lived systems, structures, and components during the

period of extended operation. Therefore, they need not be implemented as part of license renewal pursuant to 10 CFR Part 54.

Alternatives

The NRC considered the environmental impacts associated with alternatives to renewing the CGS operating license. These alternatives include other methods of power generation and not renewing the CGS operating license (the no-action alternative). Replacement power alternatives considered were natural gas combined-cycle generation; new nuclear generation; and a combination alternative that includes a portion of the natural gas combined-cycle capacity, a conservation component, a purchased power component, a hydropower component, and a wind power component. The no-action alternative and the effects it would have were also considered by the NRC. The NRC evaluated each alternative using the same impact areas that were used in evaluating impacts from license renewal. Where possible, the NRC considered the existing infrastructure at the CGS site (e.g., transmission facilities, water intakes, and discharges) and whether it could be used by new alternative power plants.

The NRC also considered many other replacement power alternatives to renewing the CGS operating license; these were later eliminated from detailed study due to technical, resource availability, or commercial limitations that currently exist and are likely to continue to exist when the existing CGS license expires. Replacement power alternatives considered but eliminated from detailed study include the following:

- offsite new nuclear and natural gas-fired capacity
- new coal-fired capacity
- energy conservation and energy efficiency as full replacement for current capacity
- purchased power
- solar power
- wind power
- biomass waste
- hydroelectric power
- wave and ocean energy
- geothermal power
- municipal solid-waste
- biofuels
- oil-fired capacity
- fuel cells
- delayed retirement of currently operating generating plants in the region

Recommendation

The NRC's recommendation is that the adverse environmental impacts of license renewal for CGS are not great enough to deny the option of license renewal for energy-planning decisionmakers. This recommendation is based on the following:

- the analysis and findings in the GEIS
- the ER submitted by Energy Northwest
- consultation with Federal, state, and local agencies
- the NRC's environmental review
- consideration of public comments received during the scoping process and draft SEIS comment period

ABBREVIATIONS AND ACRONYMS

AADT	annual average daily traffic
ac	acre
AC	alternating current
ACC	averted cleanup and decontamination costs
ACHP	Advisory Council on Historic Preservation
ACRS	Advisory Committee on Reactor Safeguards
ADAMS	Agencywide Document Access and Management System
AEA	Atomic Energy Act of 1954
AEO	annual energy outlook
ALARA	as low as is reasonably achievable
ANS	American Nuclear Society
ANSI	American National Standards Institute
AOC	averted offsite property damage costs costs
AOE	averted occupational exposure
AOSC	averted onsite costs
AP	Associated Press
AP1000	Advanced Passive 1000
APE	averted public exposure
AQCR	air quality control region
ASME	American Society of Mechanical Engineers
ATWS	anticipated transient without scram
AWEA	American Wind Energy Association
B&W	Babcock and Wilcox Company
BA	biological assessment
BLM	Bureau of Land Management
BOP	balance of plant
BPA	Bonneville Power Administration
BRAC	Base Realignment and Closure
BTU/kWh	British thermal units per kilowatt hour
BWR	boiling-water reactor
BWROG	BWR Owners' Group
C	Celsius
C-14	carbon-14
CAA	Clean Air Act
CCF	common cause failure
CDF	core damage frequency
CDM	clean development mechanism

CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Resource, Compensation, and Liability Act of 1980
CETs	containment event tree
CFR	*Code of Federal Regulations*
cfs	cubic feet per second
CGS	Columbia Generating Station
CLB	current licensing basis
cm	centimeter
CO	carbon monoxide
CO_2	carbon dioxide
COE	cost of enhancement
COK	containment intact
COL	combined operating license
CRPP	Cultural Resources Protection Program
Cs-137	cesium-137
CsI	cesium iodide
CST	condensate storage tank
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	Clean Water Act
DBA	design basis accident
DC	direct current
DG	diesel generator
DHR	decay heat removal
DOE	Department of Energy
DPS	distinct population segment
DWS	drinking water standard
ECCS	emergency core cooling system
EDG	emergency diesel generator
EFH	essential fish habitat
EFSEC	Energy Facility Site Evaluation Council
EIA	Energy Information Administration
EIS	environmental impact statement
EJ	environmental justice
ELF-EMF	extremely low frequency-electromagnetic field
EMS	environmental management system
EN	Energy Northwest
EO	Executive Order
EOPs	emergency operating procedure

EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPRI	Electric Power Research Institute
EPZ	emergency planning zone
ER	Environmental Report
ESA	Endangered Species Act of 1973
ESU	evolutionary significant unit
Eu-152	europium-152
F	Fahrenheit
F&Os	facts and observations
FCRPS	Federal Columbia River Power System
FERC	Federal Energy Regulatory Commission
FES	final environmental statement
FFTF	fast flux test facility
FIVE	fire-induced vulnerability evaluation
FOIA	Freedom of Information Act
FP	fire protection
fps	feet per second
FR	*Federal Register*
FSAR	final safety analysis report
ft	foot
ft^2	square foot
ft^3	cubic foot
FW	feedwater
g	acceleration relative to earth's gravity
gal	gallon
gCeq/kWh	grams of carbon equivalent per kilowatt hour
GE	General Electric Company
GEIS	generic environmental impact statement
GHG	greenhouse gas
gpm	gallons per minute
GWh	gigawatt hour
H/E	high/early
H/I	high/intermediate
ha	hectare
HAP	hazardous air pollutant
HEPA	high efficiency particulate air
HEPs	human error probability

HFO	high wind, external flood, and other external events
HPCS	high-pressure core spray
HRA	human reliability analuysis
HVAC	heating, ventilation, and air conditioning
I-129	iodine-129
I-131	iodine-131
IAEA	International Atomic Energy Agency
ICM	interim compensatory measure
IDC	industrial development complex
in.	inch
IPE	internal plant examination
IPEEE	internal plant examination of external events
ISFSI	independent spent fuel storage installation
ISLOCA	interfacing systems loss-of-coolant accident
K	thousand
K-40	potassium-40
kg	kilogram
km	kilometer
km^2	square kilometer
kV	kilovolt
L	liter
L/E	low/early
L/I	low/intermediate
lb	pound
LEN	large, early, not scrubbed
LERF	large early release frequency
LES	large, early, scrubbed
LL/E	low-low/early
LL/I	low-low/intermediate
LLD	lower limit of detection
LLMW	low-level mixed waste
LLN	large, late, not-scrubbed
LLS	large, late, scrubbed
LLW	low-level radioactive waste
LOCA	loss-of-coolant accident
LOOP	loss of offsite power
LOSP	loss of offsite power
LPCI	low-pressure coolant injection

LPCS	low-pressure core spray
LRA	license renewal application
m	meter
M	million
M/E	moderate/early
M/I	moderate/intermediate
m^2	square meter
m^3	cubic meter
mA	milliampere
MAAP	Modular Accident Analysis Program
MACCS2	MELCOR Accident Consequence Code System 2
MCC	motor control center
mg	milligram
mgd	million gallons per day
mGy	milligray
mi	mile
mi^2	square mile
MIT	Massachusetts Institute of Technology
MLLW	mixed low-level radioactive waste
mm	millimeter
MMI	Modified Mercalli Intensity
MOA	Memorandum of Agreement
MOX	mixed oxide
mph	miles per hour
mrad	millirad
mrem	millirem
MS	main steam
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSIV	main steam isolation valve
MSL	mean sea level
MSOs	multiple spurious operations
MSPI	mitigating system performance indicator
mSV	millisievert
MT	metric ton
MW	megawatt
MWe	megawatt-electric
MWt	megawatt-thermal
N_2	nitrogen
NAAQS	National Ambient Air Quality Standards

NAS	National Academy of Sciences
NCI	National Cancer Institute
NDE	non-destructive evaluation
NEI	Nuclear Energy Institute
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NHPA	National Historic Preservation Act
NIEHS	National Institute of Environmental Health Sciences
NMFS	National Marine Fisheries Service
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
NRHP	National Register of Historic Places
NWPCC	Northwest Power and Conservation Council
ODCM	offsite dose calculation manual
OL	operating license
OMB	Office of Management and Budget
PA	programmatic agreement
pCi	picocurie
PDS	plant damage state
PGA	peak ground acceleration
PILOT	payments in lieu of taxes
PM_{10}	particulate matter with a diameter of 10 micrometers or less
PNNL	Pacific Northwest National Library
POST	Parliamentary Office of Science and Technology
PRA	probabilistic risk assessment
PSA	probabilistic safety assessment
PSD	prevention of significant deterioration
Pu-239/240	plutonium-239/240
PUD	public utility district
PWR	pressurized water reactor
RAI	request for additional information
RCIC	reactor core isolation cooling
RCRA	Resource Conservation and Recovery Act of 1976
RCW	Revised Code of Washington
rem	roentgen equivalent man
REMP	Radiological Environmental Monitoring Program
RFW	reactor feedwater

RG	Regulatory Guide
RHR	residual heat removal
RM	river mile
ROI	region of influence
ROW	right-of-way
RPC	replacement power cost
RPV	reactor pressure vessel
RRW	risk reduction worth
RTC	Report to Congress
SAMA	severe accident mitigation alternative
SAR	safety analysis report
SBO	station blackout
SCE&G	South Carolina Electric and Gas
SCR	selective catalytic reduction
SDS	seismic damage sequence
sec	second
SEIS	supplemental environmental impact statement
SER	safety evaluation report
SFPs	spent fuel pool
SHPO	State Historic Preservation Officer
SLC	standby liquid control
SLOCA	small loss-of-coolant accident
SO_x	sulfur oxides
SR	supporting requirement
Sr-90	strontium-90
SRV	safety relief valve
SSEL	safe shutdown equipment list
SSW	standby service water
Sv	sievert
SW	service water
SWTF	sanitary waste treatment facility
T	ton
Tc-99	technetium-99
TCP	traditional cultural property
TLD	thermoluminescent dosimeter
TSC	technical support center
TSP	total suspended particles
TSW	plant service water

USC	U.S. Code
USCB	U.S. Census Bureau
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCSNS	Virgil C. Summer Nuclear Station
WAC	Washington Administration Code
WCH	Washington Closure Hanford
WDFW	Washington State Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
WDOE	Washington State Department of Ecology
WDOH	Washington State Department of Health
WDOR	Washington Department of Revenue
WISC	Washington Invasive Species Council
WMD	weapon of mass destruction
WNP	WPPSS Nuclear Project
WNP-2	Washington Nuclear Plant 2
WPPSS	Washington Public Power Supply System
WSDOH	Washington State Department of Health
WTP	waste treatment plant
YTC	Yakima Training Center

APPENDIX A
COMMENTS RECEIVED ON THE COLUMBIA GENERATING STATION ENVIRONMENTAL REVIEW

A COMMENTS RECEIVED ON THE COLUMBIA GENERATING STATION ENVIRONMENTAL REVIEW

A.1 Comments Received During Scoping

The scoping process began on March 11, 2010, with the publication in the *Federal Register* (FR) of the U.S. Nuclear Regulatory Commission's (NRC's) Notice of Intent to conduct scoping (75 FR 11576). The scoping process included two public meetings, which were both held at the Richland Public Library in Richland, Washington, on April 6, 2010. Approximately 40 members of the public attended the meetings. After the NRC's prepared statements pertaining to the license renewal process, the meetings were open for public comments. Of these attendees, 10 gave oral statements that were recorded and transcribed by a certified court reporter. Transcripts of the entire meetings are an attachment to the Scoping Meeting Summary dated May 10, 2010 (NRC, 2010a). In addition to the comments received during the public meetings, comments were also received through the mail.

In addition to the April 6 public scoping meetings, the NRC held an informational meeting with representatives from several affected Native American Tribes on April 27, 2010. The scoping comments from the Tribal representatives were recorded in the meeting notes (NRC, 2010b).

Each commenter was given a unique identifier so that every comment could be traced back to its author. Table A-1 lists the individuals who made comments applicable to the environmental review and the Commenter ID associated with each person's set of comments. The individuals are listed in the order in which their comments were received. To maintain consistency with the Scoping Summary Report, the unique identifier used in that report for each set of comments is retained in this appendix.

Specific comments were categorized and consolidated by topic. Comments with similar specific objectives were combined to capture the common essential issues raised by participants. Comments fall into one of the following general groups:

- Specific comments that address environmental issues within the purview of the NRC environmental regulations related to license renewal
  - These comments address Category 1 (generic) or Category 2 (site-specific) issues or issues not addressed in the NUREG-1437, "Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants" (NRC, 1996), (NRC, 1999) or Category 2 issues. They also address alternatives to license renewal and related Federal actions.
- General comments in support of, or opposed to, nuclear power or license renewal or on the renewal process, the NRC's regulations, and the regulatory process
  - These comments may or may not be specifically related to the Columbia Generating Station (CGS) license renewal application.
- Comments that do not note new information for the NRC to analyze as part of its environmental review
- Comments that address issues that do not fall within, or are specifically excluded from, the purview of NRC environmental regulations related to license renewal

- These comments typically address issues such as the need for power, emergency preparedness, security, current operational safety issues, and safety issues related to operation during the renewal period.

Table A-1. Individuals providing comments during scoping period

Commenter	Affiliation (if stated)	Comment source	Commenter ID	ADAMS accession number
John Greenhill		E-mail	A	ML100920546
Jerome Delvin	Washington State Senate	Letter	B	ML100980062
David V. Taylor, et al.	Washington State Legislature	Letter	C	ML101040675
James O. Luce	State of Washington Energy Facility Site Evaluation Council	Letter	D	ML101050307
Brad Peck, Rick Miller, and Robert Koch	Franklin County Board of Commissioners	Letter	E	ML101110052
Tim Sheldon	Washington State Senate	Letter	F	ML101110053
Russell Jim	Confederated Tribes and Bands of the Yakama Nation	Letter	G	ML101160435
Larry Haler, Brad Klippert, Maureen Walsh, and Terry Nealey	State of Washington House of Representatives	Letter	H	ML101110054
Tim Sheldon, et al.	Washington State Senate	Letter	I	ML101170056
Phil Rockefeller	Washington State Senate	Letter	J	ML101180459
Gary Robertson	State of Washington Dept of Health	Letter	K	ML101460059
Ed Revell	City of Richland	Afternoon Scoping Meeting	L	ML101241002
Brad Peck	Franklin County	Afternoon Scoping Meeting	M	ML101241002
Steve Lee	Pasco Chamber of Commerce	Afternoon Scoping Meeting	N	ML101241002
Bob Link	AREVA	Afternoon Scoping Meeting	O	ML101241002
Lori Sanders	Benton County Public Utility District (PUD), Energy Northwest (EN) Board of Directors	Afternoon Scoping Meeting	P	ML101241002
Alvin Ankrum	Pacific Northwest National Laboratory (PNNL)	Evening Scoping Meeting	Q	ML101241037
Ed Harrington		Evening Scoping Meeting	R	ML101241037
Dan Jordheim		Evening Scoping Meeting	S	ML101241037
Gene Kinsey		Evening Scoping Meeting	T	ML101241037, ML101960547
Carrie Mathews	PNNL	Evening Scoping Meeting	U	ML101241037

Commenter	Affiliation (if stated)	Comment source	Commenter ID	ADAMS accession number
Barbara Harper	Confederated Tribes of the Umatilla Indian Reservation (CTUIR)	Tribal Outreach Meeting	V	ML102630228
Wade Riggsbee	Confederated Tribes and Bands of the Yakama Nation	Tribal Outreach Meeting	W	ML102630228
Dave Rowland	Confederated Tribes and Bands of the Yakama Nation	Tribal Outreach Meeting	X	ML102630228
Various Tribal Representatives	See list of attendees in meeting summary	Tribal Outreach Meeting	Y	ML102630228
Judy Ridge, et al.	Washington Public Power Utilities	Letter	Z	ML103230048

Comments received during scoping applicable to this environmental review are presented in this section along with the NRC response. The comments that are general or outside the scope of the environmental review for CGS are not included here, but they can be found in the Scoping Summary Report (NRC, 2010c).

Scoping comments are grouped in the following categories:

- Alternatives to license renewal of CGS
- Socioeconomic impacts of CGS
- Greenhouse gas or carbon impacts of CGS
- Other comments within the scope of the NRC's environmental review

The comments and suggestions received as part of the scoping process are discussed below. Comments can be tracked to the commenter and the source document through the ID letter and comment listed in Table A-1.

A.1.1 Alternatives to License Renewal of Columbia Generating Station

Comment E-4-ALT: *In addition to our strong support of your license renewal application, we urge you to consider developing additional nuclear power generating facilities in or near Franklin County.*

Comment M-2-ALT: *I think it answers the question that the basis of it was that the EIS [environmental impact statement] process is to consider the environmental impacts on humans of the proposed action. And I'm surprised to hear that the no-action alternative, which is required under NEPA [National Environmental Policy Act of 1969], would have a negative consequence for the region but that wouldn't be considered. But you have answered the question. Thank you.*

Comment M-3-ALT: *Okay. So again, that's just one slice. There are other various negative, I believe, impacts on local communities if it's not relicensed. Okay. So that I would have expected. That would be included in the [S]EIS?*

Comment L-3-ALT: *And just recently and this is kind of encouraging, just recently our Governor has made public statements in favor of looking at the nuclear option here for the state.*

So, I would say the state is opening up a little and will be a little more receptive as we look into the future.

Comment P-2-ALT: *And we're all going to see a lot of additional wind power being put up and already it just amazes me how much we have and it's becoming more and more difficult to balance that. It's unreliable, you can't make the wind blow, and we use our hydro system to balance it. And, although the nuclear plant doesn't balance the wind in itself, it allows more flexibility of the hydro system to do so. And, those items ought to be considered when you're looking at the environmental impact of this plant. It isn't just the long term storage. It isn't just the construction of a plant. It's what do you do if you don't have it? And, I think that's really what Mr. Peck was trying to say and I really think it ought to be considered.*

Comment T-1-ALT: *In my view of this event, I can truly say that the license renewal and continued operation of the Energy Northwest facility is reasonable to expect. I am not only in favor of the license renewal, I believe that it would be prudent to add other nuclear plants on this 500 plus square miles of the Hanford Nuclear Reservation.*

Response: These comments address alternatives to license renewal of CGS, including the alternative of not renewing the operating license—also known as the "no-action" alternative. In Chapter 8, the NRC staff (staff) evaluated the following alternatives to CGS license renewal:

- natural gas combined-cycle generation (Section 8.1)
- new nuclear generation (Section 8.2)
- combination alternative that includes a portion of the natural gas combined-cycle capacity, a conservation component, a purchased power component, a hydropower component, and a wind power component (Section 8.3)
- not renewing the CGS operating license—the "no-action" alternative (Section 8.5)

A.1.2 Socioeconomic Impact of Columbia Generating Station

Comment B-2-SOC: *Most importantly, extending the life of the Columbia Station is integral to Washington's economic success. In addition to paying millions of dollars each year in tax revenues to the state and municipal governments, Columbia is one of the largest employers in the Tri-Cities, providing full-time employment to more than 1,100 workers who, in turn, significantly invest in our state and local economy. Your approval will ensure a reasonable cost of power in Washington and help drive a strong economy.*

Comment E-3-SOC: *Moreover, many of our citizens enjoy stable, professional working careers at Energy Northwest. Those jobs provide significant economic benefit to our county in addition to the annual power generation taxes you pay that flow back to our schools, fire departments, libraries and other local services.*

Comment F-2-SOC: *In addition to providing the region with safe, cost-effective carbon-free power, CGS is a major source of economic stability in Washington's Tri-Cities. CGS employs a large workforce, it provides significant tax revenues, and it lends support to local charitable organizations. For these reasons, the relicensing of CGS has my strong support.*

Comment N-1-SOC: *Good afternoon. I'm Steve Lee and I'm with the Pasco Chamber of Commerce. The Pasco Chamber represents some 400 local businesses in our area. And, I know we joined the other chambers and collective business in the Tri-Cities area in saying it's*

absolutely essential that Columbia Generating Station continue providing safe, clean and low cost power for our community and our surrounding area which drives the strong economy. I'm with that on behalf of Pasco businesses that Columbia Generating Station has given our community much more than just electricity. Columbia offers full time employment for many of our residents, not to mention significant tax revenues to local and state governments. Relicensing this plant will also capture extended benefits in terms of a regional invest, which we measure in both direct and indirect economic impact which extends well beyond the Pasco city limits.

Comment N-3-SOC: *The Pasco Chamber of Commerce is confident that the Columbia Generating Station with the Nuclear Regulatory Commission's approval will continue to be a safe and reliable source of economic strength for our community for many years to come. Thank you.*

Response: These comments are generally supportive of the applicant and note the socioeconomic benefits of CGS on local and regional communities and economy—including other related issues such as employment, taxes, and education. The socioeconomic impact of renewing the CGS operating license is discussed in Sections 2.2.8 and 4.9 of this SEIS, and the option of not renewing the operating license is discussed in Section 8.5.8.

A.1.3 Greenhouse Gas or Carbon Impact of Columbia Generating Station

Comment C-2-GHG: *As energy demand increases and climate change becomes a significant public policy issue, a diverse mix of clean energy resources will be critical to meet increasing electricity needs. For these reasons, it is imperative to maintain the vast quantity of carbon-free and baseload power Columbia Generating Station provides.*

Comment E-2-GHG: *We recognized the valuable role Columbia plays in our regional supply of safe, affordable and reliable carbon-free energy.*

Comment F-1-GHG: *I strongly support the relicensing of the Columbia Generating Station. The relicensing of CGS will play a crucial role in helping the region meet the growing demand for carbon-free power. According to the Bonneville Power Administration, replacing the power output of CGS with market purchases generated by fossil fuels would increase the carbon emissions of the Federal Columbia River Power System by about 3.7 million metric tons a year. CGS is also vital to a reliable and stable regional power system. The firm power from CGS complements variable hydroelectric and wind power.*

Comment J-1-GHG: *I want to add my voice to those strongly supporting relicensing of Columbia Generating Station (CGS) as an essential asset in Washington's energy resources. Since the nuclear plant received its original 40-year license in 1983, it has demonstrated its value as an important source of energy free of greenhouse gas emissions. I view Energy Northwest's planned request to renew the license for another 20 years as an essential step in extending upon that value, which is likely to grow as the demand for carbon-free power increases. CGS provides some of the region's most cost-effective carbon-free power, making it essential to state, regional and national goals of reducing carbon emissions that contribute to climate change. The Bonneville Power Administration estimated that replacing CGS power with market purchases generated by fossil fuels would increase the carbon emissions of the Federal Columbia River Power System by about 3.7 million metric tons a year. We must retain this power source not only to avoid such emissions, but also because of its vital contribution to a*

reliable, stable regional power system. In addition, the firm power from CGS also complements more variable, renewable hydroelectric power.

Comment N-2-GHG: *We also live in an environmentally conscious time and Columbia Generating Station's benign impact on the environment through safe and clean carbon-free power generation speaks to the plants leading role as a steward of our natural resources.*

Comment O-2-GHG: *The Columbia Generating Station represents an important environmental asset to the Northwest region of the United States as it generates critical electrical energy for our economy without any CO_2 [carbon dioxide] emissions. If the license is not renewed, I can guarantee you the replacement source, even if it is not CO_2 emitting, would consume previous resources in its construction and add to the global environmental footprint. These impacts on the environment will be deferred by allowing this well operated asset to continue to serve the community well into the future.*

Comment P-1-GHG: *And I would just like to note, I understand Mr. Peck's comment on environmental issues not being concerned and I really think what he's trying to capture is just to point out that we are a unique community. We're probably the envy of most communities across the United States because we already have 97 percent of our power is carbon-free. And the majority of that is coming from Bonneville Power System and Columbia Generating Station is 10 percent of that system. So it's really an important part of keeping our resources, not necessarily renewable maybe, but as carbon-free as possible.*

Comment S-1-GHG: *As a Tri-City's resident one of the things I love to brag about to people from out of state is that my power company, that delivers power to my house, tells me that 95 percent of the power delivered to my house comes from non-green house gas, non-global warming sources. And that's something we're proud of and I'd like to see continue. Ten percent of that comes from the Columbia Generating Station, so it seems appropriate to me that the environmental impact statement's side of this incorporates some positive aspects of the non-global greenhouse gas side of it.*

Response: These comments are generally supportive of license renewal and describe CGS as a source of power with low carbon emissions when compared to fossil fuel-powered sources. Greenhouse gas emissions of the nuclear fuel cycle are discussed in Section 6.2. Additionally, the environmental impacts of reasonable alternatives are discussed in Chapter 8.

A.1.4 Other Comments within the Scope of the U.S. Nuclear Regulatory Commission's Environmental Review

Comment A-1-SAMA: *The probability of a super solar storm of the 1859 or 1921 size is about 1/100 years or 1 [percent per] year. This size storm could lead to a continental wide, long term (many months) outage of the bulk power grid because of damage to all the U.S. step-up [extra-high-voltage] transformers. This damaged would be similar to the damage that occurred at Salem New Jersey in 1989 during a fairly mild solar storm. With such an outage, the emergency generators (that drive the cooling pumps) fuel supply could run out and may not be replaced because all the commercial fuel suppliers would be out of fuel as well due to the failure of the electrical pumps. Without fuel for the cooling pumps, the core damage frequency (CDF) appears to be several orders larger that the CDF given in the table 5-2. Perhaps [a] solar storm initiating event should be included in all the final [S]EIS documents.*

Response: The Severe Accident Mitigation Alternative (SAMA) analysis considers potential ways to further reduce the risk from severe reactor accidents in a cost-beneficial manner. The process for identifying and evaluating potential plant enhancements involves use of the latest plant-specific, peer-reviewed probabilistic risk assessment (PRA) study. These risk assessment studies typically show that loss of offsite power (LOSP) and station blackout (SBO) sequences are among the dominant contributors to CDF for nuclear power plants and account for about 20–50 percent of the CDF. As a result, enhancements to mitigate SBO events initiated by a LOSP are routinely identified and evaluated in the SAMA analysis. Consideration of SBO events initiated by a solar storm would not be expected to result in identification of additional SAMAs to mitigate LOSP and SBO events since license renewal applicants already search for potential means to mitigate these risk contributors.

Consideration of solar storms would not be expected to substantially affect the CDF for LOSP or SBO events because postulated damage to generator step-up transformers would not affect the operation of the emergency diesel generators (EDGs). The EDGs would function to cool the reactor core until connections to the electrical grid are reestablished or alternative means of core cooling are established. Onsite fuel storage is typically sufficient to provide for at least 7 days of EDG operation and would be replenished during this period, as demonstrated at the Turkey Point plant following Hurricane Andrew in 1992 (NRC, 1992). Even with a major disruption in the supply chain, the 7-day period is sufficient for alternative arrangements to be made to resupply fuel for nuclear power plant EDGs in accordance with the National Response Framework (see National Response Framework, Emergency Support Function #12–Energy Annex, http://www.fema.gov/pdf/emergency/nrf/nrf-esf-12.pdf). Alternative means of core cooling would be viable in the longer term, given that core cooling requirements (e.g., required pumped flow rates) would be substantially reduced days and weeks after reactor shutdown and given the substantial industry and Federal resources that would be available to facilitate these measures.

If there is incompleteness in current PRAs with respect to an underestimate of the frequency or consequence of solar storm-initiated LOSP or SBO events, the sensitivity analysis done on the SAMA benefit calculation would capture the increased benefit that might result from a more explicit consideration of solar storm-induced events. This analysis typically involves increasing the estimated benefits for all SAMAs by an uncertainty multiplier of approximately two to determine if any additional SAMAs would become cost-beneficial and retaining any such SAMAs for possible implementation. In summary, the consideration of solar storm-initiated events would not be expected to alter the results of the SAMA analysis since enhancements that address these types of events are already considered in the applicants' search for SAMAs to mitigate SBO or LOSP events, and any potential underestimate of the benefit of these SAMAs would be captured in existing applications by the use of the uncertainty multiplier on the SAMA benefits.

The results of the staff's review of the SAMA analysis are presented in this SEIS in Section 5.3 and Appendix F.

Comment D-2-OTH: *The Council has reviewed the environmental and safety portions of CGS's license renewal application and finds that the impacts associated with extending plant operations are adequately addressed. Three areas of ongoing interest were identified – wastewater discharge under the National Pollutant Discharge Elimination System (NPDES) permit, groundwater discharges; and storage of spent reactor fuel on-site (dry cask storage). These areas are key components of our compliance monitoring program and will continue to receive our full attention throughout the relicensing process.*

Response: The staff agrees that, in general, wastewater discharge, groundwater discharge, and storage of spent fuel are important areas of ongoing interest. The staff examined CGS's wastewater and groundwater discharges in its preparation of this SEIS. The findings are discussed in Sections 2.1.2, 2.1.3, 2.1.7, and 4.8.2. However, storage of spent fuel will not be evaluated further because, as specified by 10 CFR 51.23(b), no site-specific discussion of any environmental impact of spent fuel storage in reactor facility storage pools or ISFSIs is required in an environmental impact statement associated with license renewal.

Comment K-1-OTH: *The Washington State Department of Health ([WS]DOH) is responsible for protecting the public from exposure to radiation. At the Columbia Generating Station (CGS), we play an active role in ensuring public health. One way we achieve this is through our independent oversight of the CGS Radiological Environmental Monitoring Program (REMP). Another is through coordination with CGS's emergency preparedness group.*

Each year DOH and CGS split hundreds of samples of air, groundwater, Columbia River water, soil, sediment, and farm products. DOH's samples are analyzed for radiation at the Public Health Laboratories in Shoreline. We also measure radiation levels at locations where the public resides, and at locations near the plant, including the Independent Spent Fuel Storage Installation. The results of the analyses are used to verify the quality of the CGS results, to look for trends in environmental radiation levels, and to respond to specific incidents when radiation is found at locations where it is not expected. DOH also conducts environmental monitoring of the U.S. Department of Energy's (DOE) Hanford Site surrounding CGS. These data are available for your environmental review of CGS.

Response: The staff reviewed the radiological data and analyses from the WSDOH, in addition to data from Energy Northwest and DOE, in order to understand the potential impacts to human health that could occur if the CGS operating license were renewed. The results of this review are discussed in Sections 4.8.2, 4.9.7.4, and 4.11.4 of this SEIS.

Comment K-3-OTH: *Protecting groundwater and subsequently the Columbia River is a priority. The Columbia River is an important resource for drinking water, crop irrigation, and recreation. The groundwater below CGS is contaminated from past Hanford practices. Recently, the NRC directed all commercial nuclear power plants to conduct studies to ensure that plant operation was not impacting groundwater. The environmental review should consider how to best distinguish between the radioactive contamination currently in the groundwater from past Hanford practices, and the contamination that might occur from continued CGS operations.*

Response: The staff has evaluated the potential impact to groundwater from the extended operation of CGS and, to a limited extent, groundwater contamination from past Hanford practices. The staff reviewed CGS's historical radioactive effluent releases (normal and abnormal effluents), its groundwater protection program, and its REMP in order to assess its potential effects—separate from those of the Hanford Site. In addition, the staff reviewed historical radiological environmental monitoring data for DOE activities on the Hanford Site and information pertaining to the remediation of the site in order to assess the potential cumulative impacts from the Hanford Site and CGS. The staff also reviewed Washington State's environmental radiation monitoring data. The results of the staff's review of the potential impact to groundwater are discussed in Sections 2.1.7, 2.2.3, 4.3, 4.8.2, 4.9.7.4, 4.10, 4.11.1, and 4.11.2.

Comment K-4-OTH: *During Hanford operations, high-level waste was disposed into an unlined waste site, 618-11, directly, adjacent to CGS. DOE expects this site will be the most hazardous waste site remediated at Hanford. Considerable effort has been spent trying to reconstruct what*

might be buried there, and the best strategy for removing the waste. While DOE's goal is to remediate this site without spreading any contamination, CGS could be impacted if waste were released during cleanup activities. The environmental review should consider every possible scenario in which cleanup activities might impact CGS operations.

Comment K-5-OTH: *A significant Hanford Site cleanup challenge is stabilizing and disposing of millions of gallons of high-level waste stored in underground tanks. Under the cleanup agreement, plutonium and other high-level waste will be vitrified to make it stable for disposal. DOH has the authority to issue the air operating permit to DOE for the Waste Treatment Plant (WTP). The WTP is currently under construction, upwind of CGS, and will be operating during the proposed extended life of CGS. The environmental review should consider potential impacts from the WTP on CGS operations.*

Response to comments K-4-OTH and K-5-OTH: The staff reviewed historical radiological environmental monitoring data for the DOE activities on the Hanford Site and information pertaining to the remediation of the site in order to assess the potential impacts to CGS. In Section 4.8.2, the SEIS includes a discussion of CGS's REMP that identifies, tracks, and trends radiological conditions in the CGS facility environs from radioactive contamination from its own effluents and any that may come from the remediation activities at Hanford. In Section 4.11, the SEIS also discusses the potential cumulative impacts from the current and reasonably foreseeable remediation activities at Hanford, including characterization and remediation of Burial Ground 618-11, the construction and operations of the WTP, and the extended operation of CGS.

Comment Y-1-OTH: *The Tribes would like to participate in the environmental review process and would like input into the description of the affected environment. The tribal representatives feel that the typical Federal Government [S]EIS does not adequately address tribal environmental, cultural, and other concerns. The Tribes would like to participate in and improve the process.*

Response: In order to better understand the concerns of the potentially affected American Indian Tribes, the NRC invited Tribal representatives to an informational meeting in Richland, Washington, on April 27, 2010. A summary of this meeting was issued on October 1, 2010, and is available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML102630228. The NRC also invited Tribal representatives to participate in a data collection site visit June 8–10, 2010. Five tribal representatives from three tribes participated in this site visit. A summary of the site visit was issued on January 18, 2011, and it is available in ADAMS under Accession No. ML103400163. The NRC did not receive any written comments regarding license renewal from Tribal representatives during the scoping period. However, the NRC has considered the comments received from interactions and meetings with Tribal representatives in the development of this SEIS.

Comment V-2-OTH: *Dr. Harper would like to provide input to the evaluation of Environmental Justice (EJ).*

Response: Dr. Harper participated in the April 27, 2010, meeting between the NRC and Tribal representatives as well as the CGS site visit in June 2010. EJ is discussed in Section 4.9.7 of this SEIS. The reports submitted by Dr. Harper, about exposure scenarios for Tribal members, were considered and are summarized in Section 4.9.7.3.

Comment V-3-OTH: *Dr. Harper stated that Energy Northwest has requested to lease 20-square-miles of the Hanford Reservation from DOE for an energy park in the future. PNNL may be listed as a potential partner in this energy park.*

Response: The proposed energy park, part of the Mid-Columbia Energy Initiative, is addressed in Section 4.11.3 and 4.11.5 as a factor in discussing the cumulative impacts on terrestrial resources and socioeconomics. It is also included in the discussion of alternatives to the proposed action in Section 8.4.5. A description of the Mid-Columbia Energy Initiative is provided in Appendix G, Table G-1.

Comment V-4-OTH: *Dr. Harper and Mr. Harris initiated a discussion regarding dose assessment. The CTUIR would like a new exposure pathway to be considered in the risk assessment that captures the unique tribal lifestyle including traditional foods and way of life. The CTUIR have a tribal scenario and are interested in performing this analysis for NRC to include in the [S]EIS. The tribal scenario has been developed over the past 16 years. The CTUIR asked if the schedule for issuance of the [S]EIS could be extended to allow time to incorporate the tribal scenario. Mr. Pham indicated that information that is new and significant or site-specific will be considered. Dr. Harper offered to provide a summary and indicated that they are willing to work with the NRC regarding this topic.*

Response: Dr. Harper submitted the reports to the NRC. These reports are discussed in Section 4.9.7.3 of this SEIS.

Comment V-5-OTH: *Dr. Harper initiated a discussion regarding the schedule for renewing the license, suggesting that they may need more time if tribal scenarios are to be considered.*

Response: The staff responded to this request by considering and discussing the tribal scenarios in Section 4.9.7.3 of this SEIS within the revised schedule.

Comment V-6-OTH: *Dr. Harper raised the topic of groundwater quality and asked how that would be evaluated given the known contamination due to the plant's proximity to radiological waste burial grounds.*

Response: Groundwater use and quality is addressed in Section 2.1.7.1, including discussion of the existing contamination and monitoring wells. Section 2.2.3 describes Burial Ground 618-11, which is a radioactive waste burial ground adjacent to the CGS site. Section 4.11.1.1 addresses the cumulative impacts on groundwater resources from CGS operations and other activities of the Hanford Site.

Comment V-7-OTH: *Dr. Harper asked whether or not the original environmental analysis had natural resource mitigation.*

Response: In the Final Environmental Statement for CGS, issued in December 1981 (ADAMS Accession No. ML100570374), the staff stated on page 5-47, "At the present time the staff foresees no impacts of a magnitude requiring mitigating actions," and concluded that CGS is expected to operate with only minimal environmental impact. Therefore, no mitigation was required for potential impacts to terrestrial or aquatic resources.

Comment V-8-OTH: *Report submitted by Dr. Barbara Harper:*

2006 Progress Report: Lifestyles and Cultural Practices of Tribal Populations and Risks from Toxic Substances in the Environment.

http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/6269/report/2006

Comment V-9-OTH: *Report submitted by Dr. Barbara Harper:*

Human Scenarios for the Screening Assessment. Columbia River Comprehensive Impact Assessment. Napier, Harper, Lane, Strenge, Spivey. March 1996. U.S. Department of Energy.

Response to comments V-8-OTH and V-9-OTH: These reports were reviewed by staff and are addressed in Section 4.9.7.3 of this SEIS.

A.2 References

U.S. Nuclear Regulatory Commission (NRC), "Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20–30," Washington, D.C., NUREG-1474, 1992.

NRC, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Washington, D.C., NUREG 1437, Volumes 1 and 2, 1996, ADAMS Accession Nos. ML040690705 and ML040690738.

NRC, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Office of Nuclear Reactor Regulation, Washington, D.C., NUREG 1437, Volume 1, Addendum 1, 1999, ADAMS Accession No. ML040690720.

NRC, "Energy Northwest; Notice of Intent to Prepare an Environmental Impact Statement and Conduct the Scoping Process for Columbia Generating Station," *Federal Register (FR)*, Volume 75, No. 47, March 11, 2010, pp. 11576–11578.

NRC, "Summary of Public License Renewal Overview and Environmental Scoping Meetings related to the Review of the Columbia Generating Station License Renewal Application (TAC Nos. ME3058 and ME3121)," 2010 (2010a), ADAMS Accession No. ML101250540.

NRC, "Summary of Tribal Outreach Informational Meeting Concerning Columbia Generating Station License Renewal and Hanford Low-Level Waste," 2010 (2010b), ADAMS Accession No. ML102630228.

NRC, "Environmental Impact Statement, Scoping Process, Summary Report, Columbia Generating Station," Richland, Washington, 2010 (2010c), ADAMS Accession No. ML102770232.

A.3 Draft Supplemental Environmental Impact Statement Comments and Responses

On August 23, 2011, the NRC issued the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Columbia Generating Station," Draft Report for Comment (NUREG 1437, Supplement 47, referred to as the draft SEIS) to Federal, tribal, state, and local government agencies and interested members of the public. The U.S. Environmental Protection Agency (EPA) issued its Notice of Availability on September 2, 2011 (76 FR 54767). The public comment period ended on November 16, 2011. As part of the process to solicit public comments on the draft SEIS, the NRC did the following:

- placed a copy of the draft SEIS at the Richland Public Library in Richland, Washington, and at the Mid-Columbia Libraries--Kennewick Branch in Kennewick, Washington
- made the draft SEIS available in the NRC's Public Document Room in Rockville, Maryland
- placed a copy of the draft SEIS on the NRC Web site at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement47/
- provided a copy of the draft SEIS to any member of the public that requested one
- sent copies of the draft SEIS to certain Federal, tribal, state, and local government agencies
- published a notice of availability of the draft SEIS in the *Federal Register* on September 1, 2011 (76 FR 54502)
- filed the draft SEIS with the EPA
- announced and held two public meetings at the Red Lion Hotel in Richland, Washington, on September 27, 2011, to describe the preliminary results of the environmental review, answer any related questions, and take public comments.

Approximately 115 people attended the meetings, and 38 attendees provided oral comments. A certified court reporter recorded the oral comments and prepared written transcripts of the meeting. A meeting summary is available in ADAMS (ADAMS Accession No. ML11291A079). In addition to the comments received at the public meetings, the NRC received 74 letters and e-mails with comments. Excerpts from the public meeting transcripts and all letters and e-mails are included in Section A.5 with labels marking individual substantive comments.

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To identify each individual comment, the NRC reviewed the transcript of the public meetings and each letter and e-mail received related to the draft SEIS. The NRC identified statements related to the proposed action and recorded the statements as comments.

Each substantive comment was assigned a unique comment ID consisting of two numbers separated by a hyphen. The part of the comment ID before the hyphen is the correspondence ID, which is associated with the document that contained the comment. The part of the comment ID after the hyphen is the comment number, which refers to the sequential comment within that document. For example, comment 004-11 is the 11th comment in document 004. A digital copy of this SEIS can be downloaded from the project Web site: http://www.nrc.gov/reactors/operating/licensing/renewal/applications/columbia.html.

Each comment was assigned to a specific subject area, and similar comments were grouped together. Finally, responses were prepared for each comment or group of comments. Table A-2 lists the commenters identified by name, affiliation (if stated), comment source with ADAMS accession number, and correspondence ID.

There was no new and significant information provided on Category 1 issues or information that required further evaluation of Category 2 issues. Therefore, the conclusions in the GEIS and draft SEIS remained valid and bounding, and no further evaluation was performed. Relevant references that address the issues within the regulatory authority of the NRC are provided where appropriate. Many of these references can be obtained from the NRC Public Document Room. Where the comment or question resulted in a change in the text of the draft report, the

corresponding response refers the reader to the appropriate section of the SEIS where the change was made. Revisions to text in the draft report are designated by vertical lines beside the text.

This appendix presents the comments and the NRC's responses to them grouped by the following similar issues:

- Alternatives
- Aquatic Ecology
- Cultural Resources
- Cumulative Impacts
- Editorial
- Emergency Preparedness
- Environmental Justice
- Fukushima Event
- Human Health Issues
- Hydrology
- License Renewal and its Process
- Opposition to Nuclear
- Postulated Accidents
- Radiological Impacts
- Radiological Waste Management
- Safety
- Severe Accident Mitigation Alternatives
- Security and Terrorism
- Socioeconomics
- Spent Fuel Pool
- Support for Renewal
- Terrestrial

Table A-3. Individuals Providing Comments During the Comment Period

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Adman, Eric		Regulations.gov (ML11325A247)	051
Albin, Lynn	Washington State Department of Health	Letter (ML11334A123)	072
Apple, Robert	Spokane City Council	Regulations.gov (ML11279A228)	003
Arthur, Chris Carol	Heart of America Northwest	Regulations.gov (ML11279A232)	004
Axell, Karen		Meeting transcript (ML112910201)	100
Berg, Ken S.	U.S. Fish and Wildlife Service	Letter (ML11291A157)	037
Bell, Nina	Northwest Environmental Advocates	Letter (ML11363A047)	073

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Berlly, Bella		Meeting transcript (ML112910201)	100
Bernstein, Henry T		Letter (ML11305A013)	043
Bertish, Dvija M.	Rosemere Neighborhood Association	Meeting transcript (ML112910229)	101
Bowman, Leo	Benton County Board of County Commissioners	Letter (ML11293A043)	041
Boyajian, Jane		E-mail (ML11280A199)	021
Brennan, Colm	Alliance for Democracy, Oregon Chapter	Meeting transcript (ML112910201)	100
Brunell, Don C.	Association of Washington Business	Letter (ML11280A120)	035
Buchanan, Thomas	Washington Physicians for Social Responsibility	Regulations.gov (ML11325A317)	060
Buchanan, Thomas	Washington Physicians for Social Responsibility	Meeting transcript (ML112910229)	101
Bushman, Kathleen		Regulations.gov (ML11279A243)	015
Caird, Michelle	Inland Power & Light Company	Letter (ML11325A190)	066
Carlson, Kevin		Meeting transcript (ML112910229)	101
Castle, Janice		Regulations.gov (ML11325A309)	053
Chudy, Cathryn	Oregon Conservancy Foundation	Meeting transcript (ML112910229)	101
Clements, Tom	Friends of the Earth	Letter (ML11256A010)	002
Coscione, Nancy		Regulations.gov (ML11279A235)	007
Cox, John		Meeting transcript (ML112910229)	101
Dahlquist, Cathy	State of Washington House of Representatives—31st District	Letter (ML11287A037)	036
DiPeso, Wendy	Shoreline Washington	E-mail (ML11280A198)	020
Downing, Edith	Democratic Forum, Panorama City	Regulations.gov (ML11279A242)	014
Duvall, Lois		Letter (ML11354A110)	074
Gilbert, Steven G.	Institute of Neurotoxicology & Neurological Disorders	Regulations.gov (ML11325A244)	048
Ginn, Judy		Regulations.gov (ML11279A246)	018

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Gold, Ron	PUD No. 1 of Mason County	Letter (ML11293A042)	040
Gordon, William	Franklin PUD	Letter (ML11318A256)	045
Gott, Linda	Mason County PUD 3	Letter (ML11334A070)	071
Graham, Holly		Regulations.gov (ML11280A115)	030
Green, Holly		Meeting transcript (ML112910229)	101
Greenfield, Sahnya		Regulations.gov (ML11279A234)	006
Greenspoon, Holly		Regulations.gov (ML11279A238)	010
Haler, Larry	State of Washington House of Representatives—8th District	Meeting transcript (ML112910201)	100
Hamachek, Louisa	Nuke Info Project	Regulations.gov (ML11325A242)	046
Hastings, Colin	Tri-City Regional Chamber of Commerce	Letter (ML11280A119)	034
Hastings, Colin	Tri-City Regional Chamber of Commerce	Meeting transcript (ML112910201)	100
Heartsun, Hafiz		E-mail (ML11280A201)	023
Heartsun, Hafiz		Meeting transcript (ML112910201)	100
Heartsun, Hafiz		Regulations.gov (ML11325A312)	056
Hiltner, Carol		Regulations.gov (ML11280A110)	027
Holder, Carl		Meeting transcript (ML112910201)	100
Holman, Lonn		Regulations.gov (ML11280A203)	024
Javorik, Alex	Energy Northwest	Letter (ML11334A067)	068
Jensen, Rhoda D.		Letter (ML11291A136)	039
Johnson, Charles		Meeting transcript (ML112910201)	100
Johnson, Charles		Regulations.gov (ML11325A314)	058
Klippert, Brad	State of Washington House of Representatives—8th District	Meeting transcript (ML112910201)	100
Lampson, William N.	Lampson International, LLC	Letter (ML11280A112)	029

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Larsen, Doug		Meeting transcript (ML112910229)	101
Larsen, Pam		Meeting transcript (ML112910229)	101
Longenecker, Julie	CTUIR	E-mail (ML11325A183)	064
Loper, Mark	Heart of America Northwest	Meeting transcript (ML112910201)	100
Luce, James	Energy Facility Site Evaluation Council	Letter (ML11280A111)	028
Mahood-Jose, Eileen		Regulations.gov (ML11279A233)	005
Mann, Carolyn		Meeting transcript (ML112910229)	101
Marbet, Lloyd	Oregon Conservancy Foundation	Meeting transcript (ML112910229)	101
March, Leslie	Sierra Club	Regulations.gov (ML11325A308)	052
May, Edward R., II	Union ironworker	Meeting transcript (ML112910229)	101
May, Tom		Regulations.gov (ML11279A241)	013
McCombs, Delbert		Regulations.gov (ML11325A246)	050
McDonald, Scott		Letter (ML11280A117)	032
McDonald, Scott		Meeting transcript (ML112910229)	101
Mijal, Martin		Regulations.gov (ML11280A108)	025
Moore, Anne		Regulations.gov (ML11279A245)	017
Morris, Nancy		Meeting transcript (ML112910229)	101
Nash, Susan		Regulations.gov (ML11325A245)	049
O'Brien, Allison	U.S. Department of the Interior	Letter (ML11325A318)	061
Oliver, Marlene	Fighting Children's Cancer Foundation	Meeting transcript (ML112910201)	100
Panfilio, Madya		Meeting transcript (ML112910229)	101
Petersen, Gary	Tri-City Development Council	Meeting transcript (ML112910201)	100
Petersen, Gary	Tri-City Development Council	Regulations.gov (ML11279A240)	012

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Peterson, Merry Ann		Regulations.gov (ML11279A244)	016
Pollet, Gerry	Heart of America Northwest	Meeting transcript (ML112910201)	100
Pollet, Gerry	Heart of America Northwest	Meeting transcript (ML112910229)	101
Pollet, Gerry	Heart of America Northwest	Regulations.gov (ML11325A310)	054
Posner, Stephen	Energy Facility Site Evaluation Council	Letter (ML11334A066)	067
Radiance, Chandra		E-mail (ML11280A197)	019
Radiance, Chandra		Regulations.gov (ML11325A311)	055
Randolph, Gretchen		Regulations.gov (ML11279A236)	008
Ray, Gisela	Heart of America Northwest	Regulations.gov (ML11279A237)	009
Reichgott, Christine	EPA—Region 10	Letter (ML11325A183)	070
Reifschneider, Jill		Regulations.gov (ML11325A315)	059
Sanders, James W.	Benton PUD	Letter (ML11325A184)	065
Sanders, Lori	Benton PUD	Meeting transcript (ML112910201)	100
Sargent, Rich	Franklin PUD	Meeting transcript (ML112910229)	101
Sorgen, Jacqueline		Regulations.gov (ML11325A243)	047
Sorgen, Jacqueline		Meeting transcript (ML112910229)	101
Stelle, William W., Jr.	National Marine Fisheries Service	Letter (ML11307A393)	044
Stierling, Rachel	Heart of America Northwest	Meeting transcript (ML112910229)	101
Thompson, Diana	PUD No. 2 of Pacific County	Letter (ML11305A012)	042
Troyer, Gary L.	American Nuclear Society Eastern Washington Section	Meeting transcript (ML112910201)	100
Troyer, Gary L.	American Nuclear Society Eastern Washington Section	Letter (ML11280A118)	033
Tsongas, Theodora		Regulations.gov (ML11325A181)	062
Tsongas, Theodora		E-mail (ML11280A200)	022

Commenter	Affiliation (If Stated)	Comment Source (ADAMS Accession #)	Correspondence ID
Tsongas, Theodora		Meeting transcript (ML112910229)	101
Twombly, Mary		Regulations.gov (ML11325A313)	057
Unknown, Linda		Regulations.gov (ML11291A135)	038
Unknown		Regulations.gov (ML11280A116)	031
Valiquette, Jacquelyn		Meeting transcript (ML112910229)	101
Vaughn, Jacquelyn		Meeting TRANSCRIPT (ML112910229)	101
Vernhes, Laurence		Regulations.gov (ML11325A182)	063
Wahl, Kathleen		Regulations.gov (ML11280A109)	026
Watkins, Kris	Tri-Cities Visitor & Convention Bureau	Letter (ML11334A068)	069
Whitlam, Robert	State of Washington Department of Archaeology & Historic Preservation	Letter (ML11252B053)	001
Zimmermann, Warren		Regulations.gov (ML11279A239)	011

Table A-4. Comment Categories in Order of Presentation

Comment Category	Section	Page	Commenter (Comment ID)
Alternatives	A.3.1	A-25	• Arthur, Chris Carol (004-03) • Bernstein, Henry T. (043-04) • Bertish, Dvija M. (101-18) • Coscione, Nancy (007-02) • Dahlquist, Cathy (036-02) • DiPeso, Wendy (020-03) • Gold, Ron (040-02) • Graham, Holly (030-03) • Haler, Larry (100-23) • Hamachek, Louisa (046-03) • Javorik, Alex (068-35) (068-36) • Larsen, Doug (101-11) • Larsen, Pam (101-08) • McCombs, Delbert (050-02) • Morris, Nancy (101-87)

Comment Category	Section	Page	Commenter (Comment ID)
			• Oliver, Marlene (100-15)
			• Pollet, Gerry (100-09) (100-29)
			• Ray, Gisela (009-06)
			• Sargent, Rich (101-34)
			• Troyer, Gary L. (100-45) (100-46) (100-48)
			• Tsongas, Theodora (062-02) (062-09)
Aquatic Ecology	A.3.2	A-31	• Javorik, Alex (068-04) (068-05) (068-06) (068-07)
			• Posner, Stephen (067-01) (067-02)
			• Reichgott, Christine (070-01)
Cultural Resources	A.3.3	A-33	• Javorik, Alex (068-26) (068-27) (068-28) (068-37)
			• Longenecker, Julie (064-01) (064-02) (064-03) (064-04) (064-05) (064-06) (064-07) (064-08) (064-09) (064-10) (064-11) (064-12) (064-13) (064-14)
			• Whitlam, Robert (001-01)
Cumulative Impacts	A.3.4	A-38	• Adman, Eric (051-01) (051-04)
			• Albin, Lynn (072-08)
			• Arthur, Chris Carol (004-01) (004-04)
			• Axell, Karen (100-63) (100-66)
			• Berlly, Bella (100-51) (100-53)
			• Bernstein, Henry T. (043-02) (043-05)
			• Bertish, Dvija M. (101-19)
			• Boyajian, Jane (021-01)
			• Brennan, Colm (100-71)
			• Buchanan, Thomas (060-08)
			• Bushman, Kathleen (015-01)
			• Carlson, Kevin (101-50)
			• Chudy, Cathryn (101-72) (101-74)
			• Clements, Tom (002-01)
			• DiPeso, Wendy (020-05)
			• Duvall, Lois (074-01)
			• Gilbert, Steven G. (048-02)
			• Graham, Holly (030-01) (030-02) (030-05)
			• Greenfield, Sahnya (006-01)
			• Greenspoon, Holly (010-02)
			• Hiltner, Carol (027-01)
			• Holder, Carl (100-32)
			• Holman, Lonn (024-01)

Comment Category	Section	Page	Commenter (Comment ID)
			• Javorik, Alex (068-33)
			• Jensen, Rhoda D. (039-01) (039-08)
			• Johnson, Charles (100-37)
			• Loper, Mark (100-12) (100-19)
			• Mahood-Jose, Eileen (005-01) (005-02) (005-04)
			• Mann, Carolyn (101-55)
			• Marbet, Lloyd (101-31) (101-63) (101-64) (101-67)
			• March, Leslie (052-03)
			• McDonald, Scott (032-07)
			• Mijal, Martin (025-01) (025-04)
			• Moore, Anne (017-01)
			• Morris, Nancy (101-16)
			• Petersen, Gary (100-42)
			• Peterson, Merry Ann (016-01)
			• Pollet, Gerry (100-07) (100-08) (100-27) (100-28) (101-90) (101-92)
			• Radiance, Chandra (019-08) (019-11) (019-15) (019-20)
			• Randolph, Gretchen (008-01)
			• Ray, Gisela (009-03) (009-04)
			• Sorgen, Jacqueline (047-01)
			• Troyer, Gary L. (100-47)
			• Tsongas, Theodora (062-05) (062-07)
			• Vaughn, Jacquelyn (101-38)
			• Wahl, Kathleen (026-02)
Editorial	A.3.5	A-48	• Albin, Lynn(072-04) (072-06) (072-07)
			• Javorik, Alex (068-01) (068-02) (068-03) (068-08) (068-09) (068-10) (068-11) (068-16) (068-18) (068-19) (068-20) (068-21) (068-22) (068-23) (068-29) (068-30) (068-31) (068-40)
			• McDonald, Scott (032-03) (032-05) (032-06)
Emergency Preparedness	A.3.6	A-49	• Buchanan, Thomas (060-05)
Environmental Justice	A.3.7	A-50	• Sorgen, Jacqueline (101-24)
Fukushima Event	A.3.8	A-50	• Adman, Eric (051-03)
			• Albin, Lynn (072-01)
			• Axell, Karen (100-65)
			• Bell, Nina (073-01) (073-02) (073-03)
			• Berlly, Bella (100-52)
			• Bertish, Dvija M. (101-21) (101-22) (101-23)

Comment Category	Section	Page	Commenter (Comment ID)
			• Boyajian, Jane (021-02) (021-03)
			• Buchanan, Thomas (060-02) (060-04) (060-06) (060-07) (101-12) (101-13)
			• Castle, Janice (053-01)
			• Green, Holly (101-25)
			• Jensen, Rhoda D. (039-07)
			• Johnson, Charles (058-01) (058-03) (100-35)
			• Loper, Mark (100-11) (100-20) (100-21)
			• Mann, Carolyn (101-54)
			• March, Leslie (052-02)
			• Panfilio, Madya (101-80)
			• Pollet, Gerry (101-01) (101-02) (101-41)
			• Radiance, Chandra (019-02) (019-12)
			• Stierling, Rachel (101-35)
			• Tsongas, Theodora (062-04) (062-13)
			• Wahl, Kathleen (026-01)
			• Zimmermann, Warren (011-01)
Human Health Issues	A.3.9	A-57	• Albin, Lynn (072-09)
			• Berlly, Bella (100-56)
			• Buchanan, Thomas (060-10)
			• DiPeso, Wendy (020-04)
			• Graham, Holly (030-04)
			• Mann, Carolyn (101-58)
			• Oliver, Marlene (100-17)
			• Pollet, Gerry (101-42) (101-43)
			• Radiance, Chandra (019-18)
			• Sorgen, Jacqueline (047-02)
			• Stierling, Rachel (101-37)
Hydrology	A.3.10	A-67	• Albin, Lynn (072-02) (072-03) (072-11) (072-12)
			• Javorik, Alex (068-32)
			• McDonald, Scott (032-01) (032-02)
License Renewal and its Process	A.3.11	A-69	• Apple, Robert (003-01)
			• Axell, Karen (100-69)
			• Berlly, Bella (100-49)
			• Bertish, Dvija M. (101-20)
			• Brennan, Colm (100-72)
			• Buchanan, Thomas (060-01) (060-09)

Comment Category	Section	Page	Commenter (Comment ID)
			• Carlson, Kevin (101-53)
			• Chudy, Cathryn (101-69) (101-70)
			• Cox, John (101-04) (101-06)
			• DiPeso, Wendy (020-01) (020-02) (020-06)
			• Downing, Edith (014-01)
			• Heartsun, Hafiz (023-01) (056-02) (100-57)
			• Jensen, Rhoda D. (039-02) (039-06)
			• Johnson, Charles (058-02) (100-34) (100-36) (100-38) (100-39)
			• Larsen, Pam (101-09)
			• Mann, Carolyn (101-26) (101-27)
			• Marbet, Lloyd (101-30) (101-59) (101-60) (101-61) (101-68)
			• May, Tom (013-01)
			• McDonald, Scott (101-10)
			• Morris, Nancy (101-14) (101-86)
			• Nash, Susan (049-01)
			• Panfilio, Madya (101-81)
			• Petersen, Gary (012-02)
			• Pollet, Gerry (054-01) (100-25) (100-26) (100-30) (101-39) (101-45) (101-46) (101-49)
			• Radiance, Chandra (019-01) (019-03) (019-13)
			• Reifschneider, Jill (059-01)
			• Sargent, Rich (101-07)
			• Tsongas, Theodora (022-01) (062-08) (062-11) (062-12) (062-14) (101-28) (101-29)
			• Unknown, Linda (038-01)
			• Unknown, Unknown (031-02)
Opposition to Nuclear	A.3.12	A-84	• Apple, Robert (003-02)
			• Berlly, Bella (100-50)
			• Bernstein, Henry T. (043-01)
			• Bushman, Kathleen (015-02)
			• Chudy, Cathryn (101-71) (101-78) (101-79)
			• Coscione, Nancy (007-01)
			• Ginn, Judy (018-01)
			• Greenfield, Sahnya (006-02)
			• Hamachek, Louisa (046-01) (046-04)
			• Heartsun, Hafiz (023-03) (023-04) (023-05) (023-06) (056-01) (100-59) (100-60) (100-61) (100-62)
			• Jensen, Rhoda D. (039-03)

Comment Category	Section	Page	Commenter (Comment ID)
			• Mahood-Jose, Eileen (005-03)
			• March, Leslie (052-05)
			• McCombs, Delbert (050-01) (050-03)
			• Mijal, Martin (025-02) (025-03)
			• Morris, Nancy (101-84) (101-85) (101-88)
			• Panfilio, Madya (101-82)
			• Pollet, Gerry (101-40)
			• Radiance, Chandra (019-04) (019-06) (019-07) (019-10) (019-19) (055-01)
			• Ray, Gisela (009-01) (009-02)
			• Stierling, Rachel (101-89)
			• Tsongas, Theodora (062-01) (062-03)
			• Vernhes, Laurence (063-01)
Postulated Accidents	A.3.13	A-93	• Albin, Lynn (072-05)
			• Arthur, Chris Carol (004-02)
			• Bell, Nina (073-04)
			• Bertish, Dvija M. (101-17)
			• Carlson, Kevin (101-51)
			• Castle, Janice (053-03)
			• Chudy, Cathryn (101-77)
			• Greenspoon, Holly (010-01)
			• Hamachek, Louisa (046-02)
			• Heartsun, Hafiz (023-02) (100-58)
			• Jensen, Rhoda D. (039-04)
			• Mann, Carolyn (101-57)
			• Marbet, Lloyd (101-62)
			• March, Leslie (052-04)
			• McDonald, Scott (032-04)
			• Tsongas, Theodora (062-06)
			• Twombly, Mary (057-01)
			• Unknown, Unknown (031-01)
Radiological Impacts	A.3.14	A-97	• Albin, Lynn (072-10)
			• Posner, Stephen (067-03)
Radiological Waste Management	A.3.15	A-99	• Axell, Karen (100-68)
			• Berlly, Bella (100-55)
			• Bernstein, Henry T. (043-06)
			• Chudy, Cathryn (101-76)

Comment Category	Section	Page	Commenter (Comment ID)
			• Cox, John (101-47)
			• Gilbert, Steven G. (048-01)
			• Klippert, Brad (100-03)
			• Marbet, Lloyd (101-66)
			• Morris, Nancy (101-15)
			• Oliver, Marlene (100-16)
			• Pollet, Gerry (101-03) (101-44)
			• Radiance, Chandra (019-09) (019-17)
			• Stierling, Rachel (101-36)
			• Tsongas, Theodora (062-10)
			• Valiquette, Jacquelyn (101-32) (101-48)
Safety	A.3.16	A-102	• Adman, Eric (051-02)
			• Axell, Karen (100-64)
			• Brennan, Colm (100-70)
			• Castle, Janice (053-02)
			• Chudy, Cathryn (101-73)
			• March, Leslie (052-01)
			• Oliver, Marlene (100-10) (100-14)
			• Radiance, Chandra (019-14)
Severe Accident Mitigation Alternatives	A.3.17	A-103	• Javorik, Alex (068-34) (068-38) (068-39) (068-41)
			• Pollet, Gerry (101-91)
Security and Terrorism	A.3.18	A-104	• Bernstein, Henry T. (043-03)
			• Buchanan, Thomas (060-03)
Socioeconomics	A.3.19	A-105	• Albin, Lynn (072-13)
			• Javorik, Alex (068-17) (068-24) (068-25)
Spent Fuel Pool	A.3.20	A-107	• Axell, Karen (100-67)
			• Berlly, Bella (100-54)
			• Carlson, Kevin (101-52)
			• Chudy, Cathryn (101-75)
			• Jensen, Rhoda D. (039-05)
			• Mann, Carolyn (101-56)
			• Marbet, Lloyd (101-65)
			• Radiance, Chandra (019-16)
			• Ray, Gisela (009-05)
Support for Renewal	A.3.21	A-108	• Bowman, Leo (041-01) (041-02)
			• Brunell, Don C. (035-01)
			• Caird, Michelle (066-01)

Comment Category	Section	Page	Commenter (Comment ID)
			• Dahlquist, Cathy (036-01)
			• Gold, Ron (040-01) (040-03)
			• Gordon, William (045-01)
			• Gott, Linda (071-01)
			• Haler, Larry (100-22) (100-24)
			• Hastings, Colin (034-01) (100-13)
			• Holder, Carl (100-31) (100-33)
			• Klippert, Brad (100-01) (100-02) (100-04) (100-05) (100-06)
			• Lampson, William N. (029-01) (029-02)
			• Luce, James (028-01)
			• May, Edward R., II (101-83)
			• Petersen, Gary (012-01) (100-40) (100-41)
			• Sanders, James W. (065-01)
			• Sanders, Lori (100-18)
			• Sargent, Rich (101-33)
			• Thompson, Diana (042-01)
			• Troyer, Gary L. (033-01) (033-02) (033-03) (033-04) (100-43) (100-44)
			• Watkins, Kris (069-01)
Terrestrial	A.3.22	A-116	• Javorik, Alex (068-12) (068-13) (068-14) (068-15)
			• O'Brien, Allison (061-01)

A.3.1 Alternatives

Comment: *We the people do not need the energy these plants might generate. There is so much energy on the grid sometimes that the windmills have to be disconnected. Conservation is the healthy way to proceed, and we the people are willing to conserve.* (**004-03)** [Arthur, Chris Carol]

Comment: *We should concentrate on conservation and renewable energy sources.* (**009-06)** [Ray, Gisela]

Comment: *What should be done is to follow the example of another advanced industrial country, Germany, and phase out all nuclear generating stations over a period. In the U.S., energy could be conserved, requiring less, and made up by natural gas, solar, wind, ocean wave, and geothermal sources, as well as residual oil supplies (not pipelined Canadian shale).* (**043-04)** [Bernstein, Henry T.]

Comment: *The NW energy depts have said we don't need the 7 [percent] generated by the NUKE- we can get by with solar, wind, RES AND MAINLY, TOTALLY, WITH ENERGY CONSERVATION.* (**046-03)** [Hamachek, Louisa]

Comment: *Nuclear becomes more expensive, and has never been safe. Wind and solar are innately safe, and their price keeps going down.* (**050-02**) [McCombs, Delbert]

Comment: *We'll be testifying more on the fact that we believe firmly that this EIS fails to consider that the power from this reactor can be replaced by 2023 at low-cost and with great reliability for the region.* (**100-29**) [Pollet, Gerry]

Comment: *And also, too, again, too, actually recognize all the standards that have been improved in terms of wind energy and solar energy to incorporate that in terms of cost of what it would be to have those over the next 20 years versus having the safety standards improved at this plant is very unsafe.* (**101-87**) [Morris, Nancy]

Response to comments 004-03, 009-06, 043-04, 046-03, 050-02, 100-29, and 101-87: The NRC's analysis of alternatives to license renewal is in Chapter 8. The Sixth Northwest Conservation and Electric Power Plan (NWPCC, 2010) finds that conservation and new renewable energy generation sources developed to fulfill state renewable portfolio standard mandates will likely contribute to significant increases in generating capacity in the northwest over the next 20 years, with up to 6,000 MW of achievable conservation by 2030. Renewables, to fulfill state mandates, will contribute 1,450 average MW of energy. However, demand in the Pacific Northwest is expected to grow from 19,000 average MW to 25,000 average MW over this same period. Achievable conservation and new renewables are expected to meet a substantial portion, but not all, of this projected demand growth. Also, renewable energy sources are, by their nature, intermittent and require other sources of firm capacity to maintain the reliable operation of the power system. Generation from CGS currently provides a portion of this firm capacity and, in this sense, helps enable the siting and operation of new wind and other renewable energy projects. If the license for CGS is not renewed, the 1,190 MWe provided by the plant would need to be replaced, in addition to other new firm capacity additions needed to balance generation from new renewable energy projects.

The comments also relate to operational safety. Operational safety is outside the scope of the environmental review. An NRC safety review for the license renewal period is conducted separately. Although a topic may not be within the scope of review for license renewal, NRC is always concerned with protecting health and safety. Any matter potentially affecting safety can be addressed under processes currently available for existing operating licenses, such as the reactor oversight process. This comment does not provide significant or new information and does not fall within the scope of the license renewal, as set in 10 CFR Part 51.

The NRC staff modified the text in Chapter 8 in response to the comments related to renewable energy. The portion of the comments related to operational safety did not result in modification of the SEIS text.

Comment: *As for jobs, the Tri-Cities area would benefit from diversifying their energy resources and job dependence away from nuclear. The area is a prime location for Solar. A report coming out in November will disclose that the entire State of Washington is capable of being carbon neutral by 2030. Washington State can over time eliminate Nuclear energy from its energy portfolio.* (**020-03**) [DiPeso, Wendy]

Comment: *We own this reactor. The public has a right to say no to recommissioning this reactor, and to demand conservation and renewable energy in the place of nuclear power, which has done nothing but bring birth defects, future ruin, earth despoiling, water quality loss, and crop damage to every place in which it has reared its ugly, obsolete head.* (**030-03**) [Graham, Holly]

Comment: *The CGS is not needed to meet future power generation needs: we can use our scarce resources to develop and use alternative sources that are safer, less expensive, and sustainable.* (**062-02**) [Tsongas, Theodora]

Response to comments 020-03, 030-03, and 062-02: These comments oppose license renewal at CGS and include general statements of support for renewable sources of energy or the no-action alternative (not renewing the license). Alternatives to license renewal are considered and evaluated in Chapter 8. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *Columbia serves as a key component in our state's increasing use of intermittent renewable energy sources such-as wind and solar power. With limited opportunities to expand our hydroelectric system, Columbia's generation provides much needed firming power to maintain stability on our regional electric grid as the use of intermittent renewable energy, sources increases.* (**036-02**) [Dahlquist, Cathy]

Comment: *As energy demand increases, a mix of clean energy resources will be critical to meet increasing electricity needs. More costly intermittent resources such as wind and solar are not a replacement for dependable baseload generation. For these reasons, it is imperative to maintain the vast quantity of carbon-free and baseload power Columbia Generating Station provides. The Nuclear Regulatory Commission's preliminary recommendation is that Columbia does not have any environmental impacts that would preclude the option of granting a license extension for an additional 20 years.* (**040-02**) [Gold, Ron]

Response to comments 036-02 and 040-02: The comments are supportive of license renewal at CGS and note the commenters' opinions on the advantages of nuclear power, particularly in combination with other intermittent renewable energy sources. The combination alternative is discussed in Chapter 8 of the SEIS. These comments do not provide any new information and did not result in modification of the SEIS text.

Comment: *All alternative sources of energy need to be compared in terms of severe accident potential. This is a necessary addition to the EIS and this accident potential has not been used in the comparison, thus biasing the comparison in favor of more costly and riskier forms of energy.* (**062-09**) [Tsongas, Theodora]

Comment: *During the comparison for the preferred alternatives to do their license renewal, how does the NRC equate renewal of the license to be equal to in terms of the environmental impact any alternative when another alternative has the ability to have a catastrophic explosion?* (**101-18**) [Bertish, Dvija M.]

Response to comments 062-09 and 101-18: The Severe Accident Mitigation Alternative (SAMA) Analysis is limited to the proposed action, in this case, the operation of a nuclear power plant. It is a method to determine potential cost-beneficial measures, or mitigation, to reduce the probability and the resulting consequences of severe accidents. If an alternative energy source is selected or considered, and it is a federal or federally funded project, then the National Environmental Policy Act (NEPA) would require that the decisionmaker to consider a similar approach to mitigate the potential consequences of severe accidents for that particular alternative.

In the GEIS (NUREG-1437), the NRC staff evaluated the likelihood and consequences of severe accidents. Existing severe accident analyses were reviewed and used to predict consequences at all of the nuclear power plant sites in the United States, including risks

associated with earthquakes and flooding. The staff concluded that the probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts from severe accidents are SMALL at all plants. Since the staff did not identify any new and significant information for this issue at CGS, the NRC concluded in Chapter 5 of the SEIS that impacts of severe accidents at CGS are also SMALL. The comments do not provide any new information and did not result in modification of the SEIS text.

Comment: *Page 8-25, Line 41. In assessing aesthetic impacts, the text indicates that 290 turbines comprise the 175-MWe wind farm in the combination alternative. For consistency with the typical turbine size of 1.67 MWe on Line 25 of Page 8-31, the number of turbines for the wind component of the alternative would be closer to 105.* (**068-35**) [Javorik, Alex]

Response to comment 068-35: The comment is noted. Although a turbine size of 1.67 MWe may or may not be widely enough adopted to be considered "typical," for the purpose of evaluation and for consistency within the SEIS, the number of wind turbines assumed for aesthetic purposes has been changed to 105. However, the aesthetic impact of over 100 large turbines on 4,000 ac (1,600 ha) is still considered MODERATE to LARGE. Therefore, there is no change in the level of aesthetic impact of the wind component of the combination alternative. The text in Chapter 8 was changed as a result of this comment.

Comment: *Page 8-31, Lines 21, 22. The text says four wind power generation projects are proposed, constructed, or are operational with 50 miles of Hanford. If it is using the Hanford Site boundary as the reference, there are more than ten. The operating projects at Vansycle Ridge, Stateline, and Nine Canyon are closer to CGS than the Combine project listed on Line 22. The Bonneville Power Administration has a map of existing and proposed projects on its Web site at http://www.bpa.gov/corporate/WindPower/index.cfm.* (**068-36**) [Javorik, Alex]

Response to comment 068-36: The comment is noted. The text has been updated to reflect current and proposed projects within 50 mi of the CGS site.

Comment: *Who decided that the alternative analysis for electrical generation or conservation and efficiencies should be 1,300 some odd megawatts, or 1,350 when the reactor itself doesn't produce that?* (**100-09**) [Pollet, Gerry]

Response to comment 100-09: The combination alternative, presented in Chapter 8, considers several changing factors. Renewable energy sources by their nature are intermittent and in order to accommodate for the intermittancy without the need for storage, the combination alternative integrates the renewable sources with a natural gas-fired generation plant.

The staff assumes that 175 MWe of the combination alternative is provided by wind generation. When the wind source is providing 175 MWe of electricity, the gas-fired generation plant will contribute 685 MWe. However, in the instance where wind is providing no power generation, the gas-fired alternative would compensate and deliver 860 MWe by burning additional fossil fuel.

Under the scenario, where all renewable sources are at 100% power, the combination alternative would consist of 685 MWe net output from the gas-fired generation plants, 175 MWe of wind power, 175 MWe of hydropower, and 155 MWe of energy conservation and efficiency. The total net output of this alternative would be 1190 MWe, the equivalent of CGS.

Under the scenario where the intermittancy of wind power results in a 0% contribution of power, the combination alternative would change to 860 MWe net output from the gas-fired generation

plants, 175 MWe of hydropower, and 155 MWE of energy conservation and efficiency. The net output of this alternative would continue at 1190 MWe, the equivalent of CGS.

The gas-fired generation plant for all ranges inbetween will balance the wind production such that the total combined power from these two contributors is 860 MWe. The NRC staff also introduced the option for purchase power as an alternative to compensate for the variability of this balance.

NRC staff made modifications to section 8.3 Combination Alternative, for clarity as well as the correction of the value associated with the energy conservation and efficiency component (115MWe to 155MWe), in response to this comment.**Comment:** *I wanted to address alternative energy, and energy density. The energy density of nuclear fuel is the densest known to man. The cost to build alternative energy sources, such as windmills, et cetera, speaking as an ecologist now, is far higher than the energy projected to come from those windmills for a long time. It also disrupts bird migration patterns, et cetera, et cetera.* (**100-15**) [Oliver, Marlene]

Comment: *Further, if we look at dispatchable and reliability, we know that currently the Bonneville Power Administration has about 3,100 megawatts of wind power on line. The day before yesterday that was zero, it was unpredicted. On the other hand, Columbia Generating Station works in concert with the hydropower. They go down when the rivers are high; they come up when the rivers are low.* (**100-48**) [Troyer, Gary L.]

Response to comments 100-15 and 100-48: The comments are supportive of license renewal at CGS and are general in nature. The combination alternative is discussed in Chapter 8 of the SEIS. This comment does not provide any new information and did not result in modification of the SEIS text.

Comment: *In contrast to the renewal of a nuclear power plant permit, do you look at the environmental consequences of coal-fired powered generation in the region?* (**101-08)** [Larsen, Pam]

Comment: *Your last response tripped something inside me. So, in regards to the coal-fired question, you guys looked at a number of alternative sources of electricity. Did you guys quantify the potential discharges from those other sources and do some type of comparison against the Columbia Station?* (**101-11**) [Larsen, Doug]

Response to comments 101-08 and 101-11: As stated in Chapter 8, coal-fired generation is technically feasible and can supply baseload capacity similar to that supplied by CGS. However, the technology required for economic carbon capture is not expected to be available in time to include as part of a new coal plant to replace CGS when its license expires. It is also uncertain whether a utility would pursue a permit in the State of Washington due to uncertainties in the permitting process. For these reasons, the NRC does not consider the construction of a large, baseload coal-fired power plant in Washington State as a reasonable alternative to continued CGS operation, and it did not compare the impacts of coal-fired power generation with those of operating CGS for an additional 20 years. This comment does not provide any new information and did not result in modification of the SEIS text.

Comment: *Let Washington State lead the way in implementing safe, clean, green alternative energy solutions for its electricity needs which would also result in the creating much needed jobs.* (**007-02)** [Coscione, Nancy]

Response to comment 007-02: This comment is a general statement and is noted.

Comment: *Energy Northwest also supplies a reliable baseload of energy. Somebody just mentioned wind turbines. Wind turbines are only 20 percent efficient, at best, and I know that the west side of the state is constantly looking after building more wind turbines in hopes that we can have more wind over here to turn more wind turbines, but it just doesn't work that way. We need the baseload not only from Energy Northwest and the Columbia Generating Station, but we need it as well from renewal resources from the hydro dams.* (**100-23**) [Haler, Larry]

Comment: *Lack of renewal would require replacement with higher cost energy sources, including a mix of carbon fuel supplies, which is currently unnecessary.* (**100-45**) [Troyer, Gary L.]

Comment: *With reliability and capacity factors for scheduled operation approaching 100 percent, the Columbia Generating Station is our region's best supplement to hydropower. Therefore, we fully endorse renewal of the operating license for Columbia Generating Station.* (**100-46**) [Troyer, Gary L.]

Comment: *Being involved in the energy industry, I am aware of the alternatives of not having Columbia Generating Station. And the Columbia Generating Station parallels our goals within Franklin PUD and that is to provide our region with reliable power, cost-effective power, and certainly clean power. And the nuclear industry does that and so does Columbia Generating Station. I am going to keep my comments in regards to environmental and not safety because it does have a strong safety record. We do nationally have a strong safety record and health related with the nuclear industry as well. But if I had to go out and replace the power that Franklin gets from Columbia Generating Station, it is our second largest resource in our fuel mix. I can do it as effective, as reliable, as clean, as Columbia Generating Station and the nuclear industry. I have to look at, you know, coal. I have to look at wind. It is not reliable. And that is one thing that I don't think the common resident may understand is the reliability issues that we have in our energy industry and what this resource does to that. It is just phenomenal. Anyway, again, I want to thank you for the opportunity to do this. I think you are doing a great job here looking at the impacts reasonably in regards to the environmental assessment and the alternatives there. I was pleased to see that.* (**101-34**) [Sargent, Rich]

Response to comments 100-23, 100-45, 100-46, and 101-34: These comments express support for license renewal for CGS and suggest that there are advantages to continued operation either in comparison to, or in support of, renewable sources of energy. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

A.3.2 Aquatic Ecology

Comment: *The intake and discharge of the cooling system poses a potential thermal barrier to fish and other aquatic wildlife at the point of blowdown discharge. Studies indicated water temperature was not elevated at distances beyond 10 ft (3 m) from- the discharge structure and was imperceptible at the surface of the river in the summer. However, in the winter months, the maximum plume length detected had a temperature rise of 0.7 degrees Fahrenheit (F) at 500 ft (152 m), and a temperature rise of 0.2 degrees F isotherm was approximately 40 ft wide. Since width of the river is about 1,200 ft (370 m) wide near the blowdown discharge; the size of the plume does not likely block fish passage through the area at this time. [The] WDFW [Washington State Department of Fish and Wildlife] suggests continued monitoring at the blowdown discharge to ensure a there is not thermal barrier for aquatic species.* (**067-01**) [Posner, Stephen]

Response to comment 067-01: The State of Washington Energy Facility Site Evaluation Council (EFSEC) approves the renewal of the NPDES permit for CGS. The U.S. EPA delegates authority to EFSEC to issue permits under the Federal Water Pollution Control Act for facilities under its jurisdiction. EFSEC, through NPDES permit No. WA-002515-1, authorizes discharge of treated wastewater including that from Outfall 001, the main discharge outfall for the cooling water blowdown from the circulation water system. This current NPDES permit requires continuous monitoring of blowdown water temperature. Monitoring data are obtained during each monthly monitoring period and are summarized and reported on a discharge monitoring report form that is approved by EFSEC. The NPDES permit is discussed in SEIS Chapter 2, and status of the renewal is discussed in Appendix C.

Comment: *The intake system for the makeup water pumps consists of two buried pipes that extend into the Columbia River. The intake structure, located at the end of each of the pipe, is composed of two intake screens made up of an outer and inner perforated pipe sleeves. The outer sleeve consists of 3/8-in. diameter holes (composing 40 percent of the surface area) and the inner with 3/4-in. diameter holes (composing 41 percent of the surface area). The intake screens are designed to distribute the water flow evenly along its surface. During normal operating periods, the average makeup water withdrawal is about 17,000 gpm (1.1 m3/sec). Impingement of aquatic organisms is unlikely because the velocity of the water across the face of the intake system is several times faster than the intake velocity. Fish Protection Screen Guidelines for Washington State (work in progress, WDFW 2000) suggests minimum openings of 3/32 in. for fry less than 60 mm fork length (27 percent open) and 1/4 in. for fish greater than fork length (40 percent open). The outer screen meets the suggested percent open area for the juveniles greater than 60 mm fork length but does not block fry less than 60 mm from entering the intake structure. The [draft] SEIS indicates that phytoplankton, zooplankton, and the eggs, larvae, and juvenile forms of many of the fish and invertebrates entrained by intake systems will likely face 100-percent mortality in the cooling systems when they encounter the physical and chemical stressors. The overall conclusions of the entrainment studies indicate entrainment is minimal at facilities with closed-cycle cooling systems and will neither destabilize nor noticeably alter the population of anadromous fish including their early life stages. [The] WDFW suggests that the screen be modified to prevent entrainment of fry less than 60 mm fork length where possible.* (**067-02)** [Posner, Stephen]

Response to comment 067-02: The design and operation of CGS was reviewed, regulated, and approved by the Washington EFSEC at the time that the facility was sited and constructed. CGS is an existing facility, and the design of the intake has not been changed since its initial construction. The proposed license renewal does not include any upgrades or new designs related to the intake system. Entrainment studies performed between 1979 and 1985 showed no fish, fish eggs, or larvae collected, even though beach seine samples indicated juvenile Chinook salmon in the river. The NRC lacks a regulatory basis to recommend or require design changes to an existing intake structure based on draft guidelines and in the absence of additional information related to the entrainment of aquatic species.

Comment: *Page 2-11, Line 12 and Page D-1-7, Line 10. The description of the circulating water cooling system as a "single-cycle, forced-circulation" system is confusing and appears to have been taken from the description of the nuclear steam supply system on SEIS Page 2-1, Line 29. The text could be changed to read: "The CGS circulating water system is a closed-cycle cooling system that removes heat from the condenser and ... towers (EN, 2010)."* (**068-04)** [Javorik, Alex]

Response to comment 068-04: The circulating water system description in Chapter 2 and Appendix D-1 was revised, as recommended.

Comment: *Page 2-15, Lines 2-4 and Page D-1-11, Lines 8-10. It appears that the description of the water treatment additives for control of biofouling and corrosion in the circulating water system may have been taken from the Operating License EIS (NUREG-0812). The water treatment program has changed since issuance of the OL. Currently, the biocides are sodium hypochlorite and sodium bromide. Corrosion is controlled with orthophosphates (for mild steel) and a halogen resistant azole (for copper alloys). Sulfuric acid is added for pH control and a polyacrylate dispersant is added to inhibit scale deposition.* (**068-05)** [Javorik, Alex]

Response to comment 068-05: The water treatment additives in Chapter 2 and Appendix D-1 were revised, as recommended.

Comment: *Page 2-17, Line 24. The sentence starting on Line 24 should be changed to read: "The cooling tower makeup water system or the potable water system can supply..." (See SEIS Chapter 2 ref. EN 2005, Sec. 9.2.7.2.)* (**068-06)** [Javorik, Alex]

Response to comment 068-06: Chapter 2 was revised, as recommended.

Comment: *Page 2-17, Lines 33, 34. The last sentence should be changed to read: "Chemicals are added ... to control biological growth (e.g ., hydrogen peroxide) and to minimize corrosion (e.g., sodium metasilicate)." The specific chemical treatments for the standby service water system have not previously been described in the Environmental Report (ER) or responses to requests for additional information.* (**068-07)** [Javorik, Alex]

Response to comment 068-07: Chapter 2 was revised, as recommended.

Comment: *The EPA believes that the [draft] SEIS provides adequate discussion of the potential environmental impacts associated with the proposed action and we have not identified any potential environmental impacts requiring substantive changes. However, we do recommend that the final SEIS include updated information on the status of the National Pollutant Discharge Elimination System permit application (p. C-5) and measures to protect water quality; and outcomes of consultations with the US Fish and Wildlife Service and the National Marine Fisheries Service, including recommended measures to reduce risks and protect biota and habitat. Correspondingly, it will also be important to continue coordination with Washington State Department of Fish and Wildlife throughout the license period to monitor risks to species and take corrective action. The EPA has rated the [draft] SEIS as LO – "Lack of Objections." An explanation of this rating is enclosed. We appreciate the opportunity to review this SEIS document and look forward to reviewing the final SEIS for the project.* (**070-01)** [Reichgott, Christine]

Response to comment 070-01: Appendix C has been updated with the status of CGS's National Pollutant Discharge Elimination System permit.

In a letter to Energy Northwest dated January 27, 2012 (EN, 2012), the State of Washington Energy Facility Site Evaluation Council (EFSEC) described compliance with water quality standards:

> Special Condition S11 of the current permit contains a schedule of compliance that requires [Energy Northwest] demonstrate compliance with the state's Surface Water Quality Standards (Chapter 173-201A Washington Administrative

Code (WAC)) and Ground Water Quality Standards (Chapter 173-200 WAC). The permit requires [Energy Northwest] to: 1) inspect the outfall diffuser in the Columbia River and photographically document functionality, 2) conduct an effluent mixing study, and 3) conduct whole effluent toxicity (WET) testing. In addition, the application process requires [Energy Northwest] to fully characterize its discharge for priority pollutants. EFSEC received the outfall inspection report in 2007 and the effluent mixing study report in 2008. Both reports were evaluated by Ecology and approved by EFSEC in 2008. WET testing and priority pollutant characterization data are necessary to verify compliance with surface water quality standards and to renew the permit. WET testing typically requires quarterly sampling over a 12-month period. The timing for testing and characterization for priority pollutants are related to completion of the condenser replacement project and will occur as soon as EFSEC arranges technical support from Ecology. The schedule of compliance also requires [Energy Northwest] to verify that. its discharges to ground water comply with state ground water quality standards. [Energy Northwest]'s ground water sampling program has been completed, Ecology has reviewed and commented on the draft report, and EFSEC expects to receive the final report for review in July 2012. At this time, EFSEC has determined CGS is in regulatory compliance with the requirements of its current NPDES Permit. Due to the characterizations still required, EFSEC anticipates it will reissue the permit in July 2013.

The staff concluded informal consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA), with the U.S. Fish and Wildlife Service (USFWS) in October 2011. Informal section 7 consultation with the National Marine Fisheries Service (NMFS) is still ongoing to evaluate the potential impacts on Federally-listed aquatic species and critical habitats near CGS under the NMFS's jurisdiction. Additional information relating to the special status species and habitats can be found in section 4.7 of this SEIS.

A.3.3 Cultural Resources

Comment: *We concur with your Determination of No Adverse Effect based upon the implementation of the Cultural Resources Protection Plan and the identified stipulations on page 4-28 including the training elements on Lines 6 thru 15. We look forward to the development of the Training Agendas and the CRPP scheduled revisions. We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4). In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and this department notified. These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36 CFR 800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified.* (**001-01)** [Whitlam, Robert]

Response to comment 001-01: This comment refers to Section 106 consultation between the NRC and Washington Department of Archaeology and Historic Preservation under the National Historic Preservation Act (NHPA). Sections 2.2.8.4 and 4.9.6 of the SEIS have been modified to reflect the Department of Archaeology and Historic Preservation's determination of "No Adverse Effect." The NRC has forwarded this request to Energy Northwest and DOE for consideration in future planning and development efforts at Hanford and CGS (NRC, 2012).

The NRC will also forward correspondence and comments from tribes to the Washington Department of Archaeology and Historic Preservation. This comment was provided by the Washington Department of Archaeology and Historic Preservation. The NRC responded by letter dated January 31, 2012 (NRC, 2012b).

Comment: *Include a description of the cooling tower plume in Section 2.2.8.4 Visual and Aesthetic Resources. This plume is quite visible from many places in the region depending upon the time of year and is within the viewshed of both Rattlesnake Mountain and Gable Mountain, traditional cultural properties [TCPs] that are important places to the CTUIR. Include a discussion of this plume and an analysis of potential visual impacts to these properties in the Historic and Archaeological Resources sections.* (**064-01)** [Longenecker, Julie]

Response to comment 064-01: Section 2.2.8.4 of the SEIS has been revised to include a description of the visible plume of condensation rising up from the cooling towers, which varies under seasonal and certain meteorological conditions. Section 4.9.6 describes the impacts of CGS operations on historic and archaeological resources. Since Energy Northwest has no plans to alter the appearance of CGS, there would be no additional visual impacts, which means any impacts to the TCPs on Laliik, Gable Mountain, and Gable Butte would not change as a result of license renewal. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *[The] CTUIR Cultural Resources Protection Program (CRPP) would like to receive a list of artifacts recovered from 45BN257 during archaeological excavations that occurred prior to the construction of the intake and outfall structures. According to the EIS, these are currently stored within DOE's Hanford Site Cultural and Historic Resources Program Collection.* (**064-02)** [Longenecker, Julie]

Response to comment 064-02: The NRC will forward this request to Energy Northwest and DOE. The management of DOE's Hanford Site Cultural and Historic Resources Program Collection is not within the NRC's jurisdiction. No change was made to the SEIS as a result of this comment. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *CTUIR CRPP recommends that CGS lands be re-surveyed for cultural resources since it has been over 30 years since they were surveyed. CRPP recommends that that this become a condition of the relicensing activity or that a separate PA [programmatic agreement] be developed by NRC and Energy Northwest in consultation with Tribes and SHPO [State Historic Preservation Officer].* (**064-03)** [Longenecker, Julie]

Comment: *CTUIR CRPP recommends that area next to the Columbia River be monitored annually for cultural resources. Archaeological material may continue to be exposed. CRPP recommends that that this become a condition of the relicensing activity or that a separate PA be developed by NRC and Energy Northwest in consultation with Tribes and SHPO.* (**064-04)** [Longenecker, Julie]

Response to comments 064-03 and 064-04 : The NRC will forward these requests to Energy Northwest and DOE. Energy Northwest currently has no license renewal-related ground-disturbing activities planned at CGS. However, given the potential for the discovery of additional historic and archaeological resources, Energy Northwest developed a cultural resources protection procedure to ensure the protection of these resources prior to any ground disturbance associated with future plant operations and maintenance activities at the CGS site. No change was made to the SEIS as a result of these comments. These comments were

provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *On page 2-67, Lines 30-32 describe several artifacts as having been observed in the vicinity of the current locations of the intake and outfall structures prior to construction. Although the artifacts were not recorded as part of a site, what happened to these artifacts? Provide a list of these artifacts and confirm if these artifacts were collected and if they are stored with the artifacts from 45BN257 within DOE's Hanford Site Cultural and Historic Resources Program Collection.* (**064-05)** [Longenecker, Julie]

Comment: *Will these collections be maintained by DOE for [Energy Northwest] and are there agreements in place that direct DOE to protect these collections? Who is responsible for their protection?* (**064-06)** [Longenecker, Julie]

Comment: *Page 2-68, Line 27, states that a 1999 survey recorded 45BN706 (lithic core) and 45BN760 (anvil stone). Confirm if these artifacts were collected and if not, how is Energy Northwest protecting them? If so, were they added to DOE's collection?* (**064-07)** [Longenecker, Julie]

Comment: *Page 2-68, Line 32 indicates that two lithic flakes were observed in the general location of 45BN257. Confirm if these artifacts were collected and if not, how is Energy Northwest protecting them? If so, were they added to DOE's collection?* (**064-08)** [Longenecker, Julie]

Response to comments 064-05, 064-06, 064-07, and 064-08: The NRC will forward these requests to Energy Northwest and DOE. The management of DOE's Hanford Site Cultural and Historic Resources Program Collection is not within the NRC's jurisdiction. No changes were made to the SEIS as a result of these comments. These comments were provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *As the leasee, is it Energy Northwest's responsibility is it to maintain archaeological site records, collections etc. for the CGS site? Or is it DOE's? Is there an agreement or procedure in place that governs this? CTUIR CRPP recommends that a formal agreement be developed to clarify roles and responsibilities of Tribes, Energy Northwest, NRC and DOE on the CGS site regarding human remains, archaeological sites, collections and cultural resources compliance. CRPP recommends that this agreement be part of the condition of the NRC relicensing activity or that a separate PA be developed by NRC and Energy Northwest in consultation with Tribes and SHPO outlining these.* (**064-09)** [Longenecker, Julie]

Response to comment 064-09: The NRC will forward this request to Energy Northwest and DOE. As a land-managing agency, it is DOE's responsibility to maintain archaeological site records including information about any cultural resource material collected from the CGS site. The management of DOE's Hanford Site Cultural and Historic Resources Program Collection is not within the NRC's jurisdiction. No change was made to the SEIS as a result of this comment. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *Page 4-27, Line 26-28 indicates that tribes suggested that Energy Northwest work with tribes to develop cultural resources training for Energy Northwest staff. What is the status of this training and when will it occur? CTUIR recommends that this be a requirement as part of the license renewal or be addressed in a PA developed by NRC in consultation with Tribes and SHPO outlining these.* (**064-10**) [Longenecker, Julie]

Response to comment 064-10: The NRC will forward this status request to Energy Northwest regarding the development of the cultural resources awareness training at CGS. While the NRC does not have the regulatory authority to mandate this requirement, Energy Northwest will be encouraged to work with the tribes and the Washington SHPO to develop this training. No change was made to the SEIS as a result of this comment. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *The CTUIR CRPP would like to receive and review Energy Northwest's cultural resources protection procedure and be formally consulted on the implementation of this procedure. Does the procedure call for coordination and/or consultation with CTUIR CRPP? CRPP recommends that this procedure be part of a separate PA developed by NRC and Energy Northwest in consultation with SHPO and Tribes.* (**064-11**) [Longenecker, Julie]

Comment: *The CTUIR CRPP would like to meet with the Energy Northwest personnel who oversee the implementation of the cultural resources protection procedure as well as establish a long-term consultation process and relationship between local staff at Energy Northwest and CTUIR CRPP.* (**064-12**) [Longenecker, Julie]

Response to comments 064-11 and 064-12: The NRC will forward these requests to Energy Northwest. The NRC will also encourage Energy Northwest to consult with the tribes regarding the implementation of the cultural resources protection procedure. No change was made to the SEIS as a result of these comments. These comments were provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *Page 4-27-4-28 of the EIS mentions the MOA [Memorandum of Agreement] for Energy Northwest's communication facility located on Rattlesnake Mountain that was signed by DOE, Energy Northwest and SHPO. CRPP would like to remind Energy Northwest and DOE of stipulation B.2 in the MOA committing Energy Northwest and DOE to evaluating technologies as they become available that enable relocation of this facility off of Rattlesnake Mountain. CRPP recommends that this MOA be tied to the NRC relicensing conditions, as operation of the communications facility is part of the relicensing action either as a condition of the license or through the development of a PA by NRC and Energy Northwest in consultation with Tribes and SHPO.* (**064-13**) [Longenecker, Julie]

Response to comment 064-13: The NRC will forward this request to Energy Northwest and DOE. Stipulation B.2 of the MOA between Energy Northwest and DOE is not within the NRC's jurisdiction. No change was made to the SEIS as a result of this comment. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *Page 2-68, Line 37—the survey was completed by the CTUIR not for the CTUIR.* (**064-14**) [Longenecker, Julie]

Response to comment 064-14: Section 2.2.10 of the SEIS has been revised to reflect that the CTUIR completed the survey. This comment was provided by the CTUIR. The NRC responded to the CTUIR by letter dated January 31, 2012 (NRC, 2012a).

Comment: *Page 4-27, Lines 34, 35. The text is correct but could be made more specific by changing the sentence to read: "The procedure is...received training on the NHPA Section 106 consultation process..." (See SEIS Chapter 4 ref. Gambhir, 2010a.)* (**068-26**) [Javorik, Alex]

Response to comment 068-26: The sentence has been revised, as recommended, to specify the subject of training.

Comment: *Page 4-28, Lines 8-10. Because Section 106 consultation is a very prescriptive process engaged in by the cultural resource program owner, the text appears to overstate the training that should be recommended for all staff engaged in earth disturbing activities We suggest the following wording for sentence that starts on Line 6: " ... and by providing training for enhanced cultural awareness by staff engaged in planning and executing ground disturbing activities."* (**068-27**) [Javorik, Alex]

Response to comment 068-27: Section 4.9.6 of the SEIS has been revised to clarify the need for cultural resources awareness training at CGS rather than Section 106 training.

Comment: *Page 4-28, Lines 10, 11. The text suggests that any revisions to the CGS Cultural Resources Protection Plan be developed in consultation with the NRC, the State Historic Preservation Officer (SHPO), and the tribes. Energy Northwest does not typically involve external organizations in the development or revision of procedures that govern internal processes. However, Energy Northwest does welcome external suggestions regarding potential enhancements to our programs. We suggest that the sentence that starts on Line 10 be revised to read: "Substantial revisions to the Cultural Resources Protection Plan should be provided to the Washington SHPO."* (**068-28**) [Javorik, Alex]

Response to comment 068-28: Section 4.9.6 has been revised to reflect that only substantial changes to the Cultural Resources Protection Plan would be provided to the tribes and Washington SHPO. In a letter dated September 1, 2011 (Whitlam, 2011), the Washington SHPO stated, "We concur with your Determination of No Adverse Effect based upon the implementation of the Cultural Resources Protection Plan and the identified stipulations on page 4-28 including the training elements on lines 6 thru 15. We look forward to the development of the Training Agendas and the CRPP scheduled revisions." The NRC encourages Energy Northwest to comply with the Washington SHPO's request.

Comment: *Page 9-1, Lines 20-26. Consistent with our suggested changes to text on Page 4-28, Lines 8-11, we suggest the recommended mitigation measures for cultural resource protection be revised to read, "Energy Northwest could reduce the risk...and by providing training for enhanced cultural awareness by staff engaged in planning and executing ground-disturbing activities. Substantial revisions to the Cultural Resources Protection Plan should be provided to the Washington SHPO."* (**068-37**) [Javorik, Alex]

Response to comment 068-37: Section 9.1 of the SEIS has been revised to reflect changes made to the SEIS as a result of comments 068-27 and 068-28. Section 4.9.6 has also been revised to reflect that only substantial changes to the Cultural Resources Protection Plan would be provided to the tribes and Washington SHPO. In a letter dated September 1, 2011 (Whitlam, 2011), the Washington SHPO stated, "We concur with your Determination of No Adverse Effect based upon the implementation of the Cultural Resources Protection Plan and the identified stipulations on page 4-28 including the training elements on lines 6 thru 15. We look forward to the development of the Training Agendas and the CRPP scheduled revisions." The NRC encourages Energy Northwest to comply with the Washington SHPO's request.

A.3.4 Cumulative Impacts

Comment: *We the people want all the long life radioactive filth at Hanford cleaned up now and placed in sites which can be maintained and supervised. No more leaking into the ground. If*

small countries can do this, so can we. Mother Earth might say about Hanford: "What a mess! You people make this mess; now clean it up, all of it!" (**004-04)** [Arthur, Chris Carol]

Comment: *As I understand it, Hanford manufactured plutonium for the bombs dropped on Hiroshima and Nagasaki, so it has been intimately involved, since the inception of the nuclear industry. Is it true that there is still 53 million gallons of liquid waste and 25 million cubic feet of solid waste stored at Hanford? Is groundwater in a 200 square mile area beneath this site still highly contaminated?* (**005-02)** [Mahood-Jose, Eileen]

Comment: *The Columbia River and Portland Oregon are already at great risk for radioactive contamination. Clean up Hanford. Don't produce more of the most toxic poison known to mankind.* (**008-01)** [Randolph, Gretchen]

Comment: *This reactor will keep producing nuclear waste at a place which already needs cleaning up of its leaking waste storage.* (**009-03)** [Ray, Gisela]

Comment: *Please take the safety of citizens in the NW seriously - as has not been done in the past. Leakage is already verified and Hanford is a superfund site.* (**015-01)** [Bushman, Kathleen]

Comment: *I am not in favor of relicensing any nuclear plant until the clean-up can be accomplished at Hanford. We need to make sure radiation cannot get into the river, or the land, or the air. I don't believe that has been done. To me it is vital that the clean-up be done for our community and the world. Thank you.* (**016-01)** [Peterson, Merry Ann]

Comment: *I oppose the relicensing of the Energy Northwest Nuclear Plant in Richland, [Washington]. It is old and it is unsafe. It is definitely NOT "clean energy"! What happens if there is an earthquake? Where is all the toxic, radioactive waste going to be stored? Let's get Handford CLEANED UP once and for all, and use the taxpayer's money for true clean energy.* (**017-01)** [Moore, Anne]

Comment: *Considering that Hanford has never been cleaned up, there are hazardous chemicals presently leeching into the groundwater and Columbia River which empties into the Pacific Ocean --- and considering all the horrible Nuclear Plant accidents of the past all over the world and the futileness of peoples actions to try to react to these accidents --- it seems insane to me that people would even consider renewing Nuclear Plant licenses for the future. Money will drive Humanity to ultimately destroy this rare life giving planet. By the time people realize money is useless without LIFE, it will be too late. Pleeeaaase wake up!* (**024-01)** [Holman, Lonn]

Comment: *Further, there is serious doubt that this reactor should be recommissioned at all. It's on an earthquake site, surrounded by already poisonous nuclear waste from all the years of use at Hanford, and where will the new waste go, since the old waste has not been cleaned up? We shut Hanford down in the '80s because we were over and done with the hideous effects on the earth and the people in the downwind pattern over Washington, Idaho and Oregon.* (**030-02)** [Graham, Holly]

Comment: *As a resident of the State of Washington, I am opposed to further developing Hanford as a national dump for radioactive waste. Hanford needs to be cleaned up even more vigorously than at present, especially leaking containers and polluted underground water supplies, particularly aquifers headed towards the Columbia River.* (**043-05)** [Bernstein, Henry T.]

Comment: *I just really felt that it is very important that we look at what the interrelationships are on the Hanford Site. This is the only commercial reactor in the entire country located in frankly what is the stupidest possible location. It is on the river for cooling water. We all know that. Back in the 1970s, it was free land, the Hanford Nuclear Reservation. Let's build five reactors here. But it was a stupid idea. And at the time in the '70s, no one really knew what was going on at Hanford and what the risks were. The public didn't know. The utility districts that comprised WPPSS didn't know what the risks were from high-level nuclear waste tanks at that time from other nuclear facilities. Now we know. And, it is not wise to ignore it.* (**101-92**) [Pollet, Gerry]

Response to comments 004-04, 005-02, 008-01, 009-03, 015-01, 016-01, 017-01, 024-01, 030-02, 043-05, and 101-92: The cumulative analysis in Section 4.11 of the SEIS describes the impacts that may occur when the environmental effects associated with the proposed action are overlaid or added to temporary or permanent effects associated with other past, present, and reasonably foreseeable actions. This includes the past and proposed actions at Hanford, as described in Appendix G. The cumulative analysis, however, is limited to the likely environmental effects from other projects that would overlap with the environmental effects from continued operations at CGS. The regulatory authority to determine how and when restoration occurs at Hanford resides with the DOE. It is beyond the scope of this SEIS and beyond the regulatory authority of the NRC to propose or implement a restoration and waste management plan for the Hanford Site.

Comment: *[The EIS fails to] take into account the unique – and dangerous – location of the reactor on the Hanford Nuclear Reservation. Urge the NRC to have the EIS disclose and consider the impacts if there is an explosion, fire, earthquake...releasing radiation from Hanford facilities, preventing operation at the CGS reactor or recovery from an earthquake. Hanford's High-Level Waste tanks and highly contaminated buildings, including the nearby building that [Energy Northwest] proposes to use for Plutonium fuel, are not built to withstand anywhere near the potential earthquake that is possible.* (**019-15**) [Radiance, Chandra]

Comment: *The EIS should disclose and consider the impacts if there is an explosion, fire, earthquake... releasing radiation from Hanford facilities, preventing operation at the CGS reactor or recovery from an earthquake. Hanford's High-Level Waste tanks and highly contaminated buildings, including the nearby building that [Energy Northwest] proposes to use for Plutonium fuel, are not built to withstand anywhere near the potential earthquake that is possible.* (**051-04)** [Adman, Eric]

Comment: *Please take into consideration, the location of the reactor on the Hanford Nuclear Reservation. Please urge the NRC to have the EIS disclose and consider the impacts if there is an explosion, fire, earthquake... releasing radiation from Hanford facilities, preventing operation at the CGS reactor or recovery from an earthquake. Hanford's High-Level Waste tanks and highly contaminated buildings, including the nearby building that [Energy Northwest] proposes to use for Plutonium fuel, are not built to withstand anywhere near the potential earthquake that is possible.* (**052-03)** [March, Leslie]

Comment: *Site-specific environmental impacts cannot be evaluated in isolation from the location of CGS in close proximity to the Hanford facility. The cumulative impact of these two joint facilities in an incident has not been considered in this EIS. Consideration of the dangerous location of the reactor on the Hanford Nuclear Reservation has not been adequately dealt with in the EIS. The EIS must consider the impacts if there is an explosion, fire, and or, earthquake with radiation and hazardous materials releases that could prevent operation or*

recovery of the CGS reactor. Hanford's high-level waste tanks and highly contaminated buildings, including the building that [Energy Northwest] proposes to use for Plutionium fuel are not build to withstand the potential earthquakes. These risks must be described and evaluated in the EIS. (**062-07)** [Tsongas, Theodora]

Comment: *The first is in regard to the location of the CGS station on the Hanford nuclear reservation. And have – does the EIS -- I've not seen it in my review. Is there any documentation of consideration of the unique accident consequences elsewhere at Hanford in combination with an event at CGS that affects all the facilities on the Hanford nuclear reservation at the same time?* (**100-07)** [Pollet, Gerry]

Comment: *But aren't you in the EIS – aren't we entitled to see the cumulative impact and how you would recover? I mean, you discuss design basis accidents and beyond design-basis accidents. Right? And including population dose and recovery, and mitigation requirements for accidents. All that is in there. For most reactors around the country, I guess for every other reactor around the country you don't have a combination of the same design-basis earthquake could release massive amounts of radioactive and chemical material into the air because they're not located on anything like the Hanford nuclear reservation with high-level nuclear waste tanks that aren't -- so, telling me to look at the emergency plan isn't relevant to what's in here, it seems to me.* (**100-08)** [Pollet, Gerry]

Comment: *And the issue of the 325 Building raises the fact that this environmental impact statement draft fails to consider the unique location of the CGS reactor in the middle of the Hanford nuclear reservation. The 325 Building, as an example, is one that will not withstand the same earthquake as it is said -- claimed that CGS will withstand. The high-level waste tanks will not withstand that earthquake. There are numerous facilities at Hanford that will not withstand that earthquake, and there isn't any mention or consideration of how you recover, for instance, bringing diesel fuel and do the backup to restore power to the plant, which is vital, as we all have seen in light of Fukushima, when there are numerous nuclear and chemical accidents occurring and releases occurring at the same time from which recovery is attempted at the same time at the Hanford nuclear reservation.* (**100-28**) [Pollet, Gerry]

Comment: *The questions of other accidents that may occur at that site. There are questions being raised currently with the plant for the high-level radioactive waste that is being built in the central plateau at Hanford. Questions – some scientists there believe that there's a possibility of a criticality accident at that plant. What impact would that have upon the operation of Columbia Generating Station? That's a question that you haven't considered, and it's one that you should.* (**100-37**) [Johnson, Charles]

Comment: *Three, think about the unique location of the reactor at Hanford nuclear reservation. The NRC should require this on the EIS portion and consider the impact if there is an explosion, fire, or earthquake releasing radiation from Hanford facilities preventing operation of the CGS reactor, or recovery from (Telephonic interference). Hanford's high-level waste tanks and highly contaminated buildings (Telephonic interference) the Energy Northwest proposal to use the plutonium fuel (Telephonic interference) possible.* (**100-53**) [Berlly, Bella]

Comment: *You must take into account the location of Hanford in regard to possible fire, earthquake, explosion hazard, dangers to the region, land and groundwater.* (**100-66**) [Axell, Karen]

Comment: *To what extent does the GEIS examine the impact of catastrophic accidents and cancerous radioactive waste disposal operations on Columbia's Generating Station and the*

reverse of that, Columbia Generating Station having a catastrophic accident that could impact cancerous radioactive waste disposal cleanup operations? (**101-31**) [Marbet, Lloyd]

Comment: *Finally, and this came out in my question during the question period regarding the GEIS examining catastrophic accidents in Hanford's cleanup operation affecting the Columbia Generating Station and the reverse of that, the Columbia Generating Station having catastrophic events affecting the Hanford cleanup operation. You know, you would think that after Fukushima we would have got the message. I never ever in the whole time that I have been involved in the NRC's licensing proceedings ever heard that there would be an accident like that which occurred at Fukushima. It was unheard of. It was not even considered. Multiple plants, multiple failures. I mean, it is just amazing to me. And yet, here we are again. This is not being analyzed in this license renewal application EIS and it is a terrible oversight. I think it is time for this industry to own up to its responsibility to public health and safety. And, I would encourage those members of the NRC that are listening to my words anyway to rise to this occasion. This has gone on too long and it is time for it to cease, and I would hope that something would be done about it.* (**101-67**) [Marbet, Lloyd]

Comment: *The dangerous location of the reactor on the Hanford Nuclear Reservation, the environmental impact statement must disclose and consider the impacts of climate change events, fire, earthquake, explosions that could lead to leaking of radiation from Hanford facilities.* (**101-74**) [Chudy, Cathryn]

Comment: *The safety issues that need to be disclosed and discussed include mitigation for this reactor of the effects of Hanford accidents and the ability to recover from an accident. For instance, we all know in light of Fukushima, or we should know that being able to restore power is a rather critical function. The impact of a release at Hanford could very easily preclude the restoration of power to the reactor and that this EIS also needs to examine the question of what happens when there are multiple failures. CGS is not going to be the only facility at Hanford in the event of a serious design-basis earthquakes or some other accident that requires restoration of power on an urgent basis. There aren't enough linemen available to bring that power in. If there is a take cover on the Hanford Site, who is going to bring in diesel fuel or lay in lines? And if the fuel pool for cesium and strontium or another facility has potential for criticality at the same time, or there is a tank rupture and release or aligned leak and release, we need to consider how in the world we are going to mitigate that and restore functionality at this reactor at the same time.* (**101-90**) [Pollet, Gerry]

Response to comments 019-15, 051-04, 052-03, 062-07, 100-07, 100-08, 100-28, 100-37, 100-53, 100-66, 101-31, 101-67, 101-74, and 101-90: Section 4.11 of the SEIS discusses cumulative impacts related to the location of CGS on the Hanford Site to the extent that this relates to issues that are within the scope of this environmental review.

Before a plant is licensed to operate, the NRC must have "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." The NRC's decision of reasonable assurance is based on licensees complying with NRC regulations and guidance. The emergency plans for nuclear power plants cover preparations for evacuation, sheltering, and other actions to protect residents near plants in the event of a serious incident. Nuclear power plant owners, government agencies, and State and local officials work together to create a system for emergency preparedness and response that will serve the public in the unlikely event of an emergency. Federal oversight of emergency preparedness for licensed nuclear power plants is shared by the NRC and Federal Emergency Management Agency (FEMA).

As part of the reactor oversight process, the NRC reviews licensees' emergency planning procedures and training. These reviews include regular drills and exercises that assist licensees in identifying areas for improvement, such as in the interface of security operations and emergency preparedness. These reviews are used by the NRC to make radiological health and safety decisions before issuing new licenses and in the continuing oversight of operating reactors. The NRC also has the authority to take action, including shutting down any reactor deemed not to provide reasonable assurance of the protection of public health and safety.

On September 9 and 10, 2008, a full-scale plume and ingestion exercise was conducted in the 10-plume and 50-mile ingestion exposure pathway emergency planning zones (EPZs) around CGS by FEMA, Region X. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

FEMA documents the result of the exercise in a Final Exercise Report. The Federal agencies that participated in the exercise include;

- Federal Emergency Management Agency
- U.S. Department of Agriculture
- U.S. Department of Energy
- U.S. Department of Health and Human Services - CDC

The results of the CGS, including the complete participant list, that included state, county, and volunteer organizations is publicly viewable at http://www.nrc.gov/about-nrc/emerg-preparedness/related-information/fema-after-action-reports.html .

The seismic stability of structures at Hanford comply with the building standards in effect at the time of construction, as well as, DOE's current requirements for protection against natural phenomena hazards. Part of those current requirements is to periodically review natural phenomena hazard assessments and, if warranted, upgrade or replace the assessments. If hazards are found to have increased, modification of facility designs may be considered. In October 2011, DOE initiated a new, 3-year study of seismic hazards at the Hanford Site. This project is known as the Hanford Probabilistic Seismic Hazard Assessment. This new assessment will replace the current assessment of seismic hazards that was published in 1996.

Comments 100-28, 101-67, and 101-90 express a concern, in part, for emergy preparedness specifically because of the Fukushima event. Additional information and comment responses on Fukushima can be found in this Appendix under section A.3.8 Fukushima.

Comment: *General Comment. In the cumulative impacts, there is no mention of the Pomona Heights to Vantage 230 kV Line to be constructed by PacifiCorp starting in 2012. The Bureau of Land Management is doing the EIS with Yakima Training Center as a cooperating agency.* (**032-07)** [McDonald, Scott]

Comment: *General Comment. In the cumulative impacts, there is no mention of the Pomona Heights to Vantage 230 kV Line to be constructed by PacifiCorp starting in 2012. The Bureau of Land Management is doing the EIS with Yakima Training Center as a cooperating agency.* (**072-08)** [Albin, Lynn]

Response to comments 032-07 and 072-08: The proposed Pomona-Vantage 230 kV transmission line has been added to the cumulative analysis in Section 4.11, and the description of other projects considered in the cumulative analysis in Appendix G.

Comment: *Page 4-47, Line 36. The ER (SEIS Chapter 4 reference EN 2010) is listed as a source for an expected completion date of 2015 for the remediation of burial site 618-11. The ER at Page 2-101 gives the expected completion date as 2018. SEIS Chapter 4 reference EN 2010a identifies the completion milestone as September 2018.* (**068-33**) [Javorik, Alex]

Response to comment 068-33: The source (DOE, 2011) and the completion date (2018) for remediation of burial site 618-11 has been updated in Section 4.11 and Appendix G.

Comment: *Though the issue of use of mixed plutonium-uranium fuel, so-called mixed oxide fuel (MOX), is not a formal part of the relicensing process, it is imperative that information be entered into the record given the known interest of Energy Northwest to investigate the use of MOX in the Columbia Generating Station (CGS). I hereby include the two attachments for part of the docket record: 1. Issue brief of July 2011 which outlines the myriad of troubles with the Department of Energy's MOX program. Potential use of MOX by Energy Northwest is mentioned in the issue brief. (2 pages) 2. News release entitled "Secret plan exposed to use surplus weapons plutonium in Washington State reactor - FOIA [Freedom of Information Act] documents reveal Energy Northwest plans plutonium fuel (MOX) experiments while seeking to control information leaks to the media." (3p.) As use of MOX fuel in the Columbia Generating Station would make the reactor harder to control, would lead to more radiation release in case of a severe accident, and would alter the way the hotter MOX spent fuel is stored, the idea to use MOX has already caused concern by the public. Especially given that the CGS is a GE Mark II boiling water reactor, similar in design to the reactors which suffered meltdown at Fukushima, any proposal to use MOX will be met with close scrutiny. If a license amendment is sought to test MOX, which would be over a period of three fueling cycles, or to use MOX on a larger basis, it is clear that any review by the NRC will trigger formal public participation and involvement. We will thus be attentive to any licensing actions concerning MOX. Thank you for posting this letter and the attachments both in the pertinent docket as well as ADAMS.* (**002-01)** [Clements, Tom]

Comment: *Please do not use plutonium fuel in Energy NW Columbia Generating Station.* (**004-01)** [Arthur, Chris Carol]

Comment: *Why does your EIS for license renewal of the Hanford plant not mention or factor in use of MOX fuel, which was utilized and exacerbated exponentially the extent of the damage and contamination through fallout from Fukushima to as far east as Romania?* (**005-01)** [Mahood-Jose, Eileen]

Comment: *And please DO NOT bring MOX fuel to the U.S.* (**005-04)** [Mahood-Jose, Eileen]

Comment: *I oppose the relicensing of the Hanford reactor and the use of Plutonium fuel.* (**006-01)** [Greenfield, Sahnya]

Comment: *Further, the EIS should consider the safety of this new fuel and the potential pollution in case of an explosion, fire, or earthquake.* (**009-04)** [Ray, Gisela]

Comment: *Even though a separate process must be followed to permit the use of the experimental plutonium (that was used in Fukushima), this EIS must disclose the risks of using this Plutonium so that the public understands what is at stake in granting the renewal of Columbia Generating Station.* (**010-02)** [Greenspoon, Holly]

Comment: *The desperation due to current perceived economic conditions and limitation of power production for the USA's ever increasing demand for electricity for more quick energy and a way to try to recycle nasty plutonium are not at all compelling enough reasons to discount the value for the next generations to live safely in a nuclear free Columbia River Gorge. I do NOT wish for Hanford to be the next 'Fukushima type nightmare' and we have heard geologists say that the next big earthquake is predicted to be somewhere in the Cascade region of the NW. We want our entire country to phase out of all Nuclear reactors in America! We believe these reactors add to the staggering cancer rates that are exponentially noted everywhere around them. Do not recycle nuclear waste into MOX plants and depleted uranium weapons: as a situation that affects the whole world, this should be a UN decision than a Washington state official decision. Whether it would be a UN or Congressional decision, they vote how Energy NW lobbyists tell them vote and receive monetary benefits for doing so, plus they are too not well educated about the extreme dangers of radioactive waste accidents. All the people voting for this are only thinking immediate economic and energy solutions, but not considering the long term costs of mitigating the damages of inevitable future problems with out-dated systems. The cost of any nuclear accident when factored into the equation would definitely make it cost prohibitive. Using highly dangerous Plutonium fuel (MOX) in any reactors is 100 [percent] unacceptable, this needs to be a public debate as it affects everyone! This should not be just a boardroom decision! The production and transport of Plutonium fuel is much too costly and dangerous of a security risk! This is a horrible idea because the 325 building and the high-level storage facilities will not withstand the seismic activity, which is probable to occur there sometime within the next 10- 20,000 years!* (**019-08)** [Radiance, Chandra]

Comment: *[I insist] that the risks of using this fuel be disclosed in the EIS.* (**019-11**) [Radiance, Chandra]

Comment: *We urge you to PROTECT THE NORTHWEST FROM THE REACTOR USING THE SAME DANGEROUS PLUTONIUM FUEL AS FUKUSHIMA REACTOR!* (**019-20**) [Radiance, Chandra]

Comment: *The risks of using plutonium mixed waste needs to have full disclosure in the environmental impact statement. Relicensing consideration needs to be postponed until a full EIS has been completed, we know what was damaged at Fukushima and why, and until Energy Northwest has complied with the release of documents requested by Heart of America. The issue of transporting plutonium from around the country has not been sufficiently addressed. Communities located along transportation Lines have a right to participate in this debate.* (**020-05)** [DiPeso, Wendy]

Comment: *[I ask that] the risks of MOX fuel be included in the EIS.* (**021-01)** [Boyajian, Jane]

Comment: *I am upset about the elimination of transparency and democratic process where you are 1) sneaking in the continuation of operating the Hanford reactor despite government's orders to shut it down; and, 2) switching to Plutonium fuel. This is the most toxic radiation that exists. There is NO need to use this to generate electricity. The ONLY use is to make MORE*

Weapons of Mass Destruction [WMD]. THIS IS TOTALLY UNACCEPTABLE. It's true our WMD are aging and there are now better technologies to do nuclear WMD. However, take apart the "obsolete" (albeit extremely destructive) old weapons and recycle the Plutonium. (The BEST is to not make nuke WMD at all.) (**025-01)** [Mijal, Martin]

Comment: *Changing the fuel at the Hanford reactor was so buried as to be unfindable. Why are you afraid of this info? Why no transparency? What are you afraid of if this is such a bright idea? Why no public meetings to tell us how the nuclear geniuses think this is a great idea? I am disappointed and angry that you are running your job this way. I feel BETRAYED. You have a serious job that not done well has the potential to make the planet uninhabitable. Oh, I guess the cockroaches came back first to the South.* (**025-04)** [Mijal, Martin]

Comment: *The contemplated fuel is untenable and the safety of the people of this state and Nation must be primary.* (**026-02)** [Wahl, Kathleen]

Comment: *ABSOLUTELY DO NOT RENEW THE LICENSE AND DO NOT ALLOW MOX FUEL. It is a death wish for the planet. Certainly, you are not oblivious to the radioactivity that has been released by these abominations! It is your family that gets cancer too!!! PLEASE come to your senses!!* (**027-01)** [Hiltner, Carol]

Comment: *Instead of phasing out old and unreliable reactors, Energy NW is asking secretly to use the same experimental Plutonium fuel in Hanford as the Fukushima Reactor #3 [in] Japan to keep this unsafe form of power alive. The EIS on relicensing the plant ignores this. The risks of using this fuel must be disclosed to the cities involved.* (**030-01)** [Graham, Holly]

Comment: *I want you to stop this fuel, and stop this reactor.* (**030-05)** [Graham, Holly]

Comment: *Do not use Pu/MOX fuel at Hanford/Columbia Generating Station.* (**039-01)** [Jensen, Rhoda D.]

Comment: *DO NOT USE PLUTONIUM AT HANFORD.* (**039-08)** [Jensen, Rhoda D.]

Comment: *Using plutonium fuel increases the danger from unforeseen events like Three Mile Island (leak) and Fukushima (tsunami flooding shutting down coolant systems).* (**043-02)** [Bernstein, Henry T.]

Comment: *Where is the EIS re: the ACTUAL types of nuclear materials YOU WILL BE USING [at] Hanford?* (**047-01)** [Sorgen, Jacqueline]

Comment: *In addition, stop consideration of using MOX plutonium fuel.* (**048-02)** [Gilbert, Steven G.]

Comment: *The EIS fails to consider the impacts and risks of the proposal to use Plutonium fuel.* (**051-01)** [Adman, Eric]

Comment: *We want all speculation and planning for MOX plutonium fuel option to be ended at CRS. The licensing of this additional load of radioactive nuclides in the plutonium fuel rods, even with only a 15 [percent] of the reactor fuel load, would increase, according to the American Nuclear Society, a nuclear industry organization's report on March 25, 2011, the amount of nuclear contamination during an accident by up to 40 [percent]. MOX is unstable and more unsafe than low enriched uranium based fuel rods.* (**060-08)** [Buchanan, Thomas]

Comment: *Any use of plutonium is unwarranted. We simply cannot afford the risks of irreversible harm to our health and the ecosystem that supports life on this planet. The EIS ignores the proposed plan to use plutonium fuel, the same fuel as Fukushima reactor 3 with grave risks and extensive radiation releases. The risks must be disclosed in the EIS. A technical analysis by Energy NW has pointed out that if a full load of plutonium fuel had been used in Reactor 3, the offsite radiation doses, already too high, would have been much higher. We cannot afford to take these risks in light of current knowledge.* (**062-05)** [Tsongas, Theodora]

Comment: *We urgently request that the risks of the experimental plutonium fuel, the same as used in the Fukishima Reactor 3, be included/disclosed in the environmental impact statement slated to be released in 2012 for the relicensing of the Hanford Nuclear Reactor. Given the engineering, environmental, and economic impacts of the release of this most horrible nuclear substance into the entire Pacific Rim ecosystem, it is important that these impacts on the Columbia Basin be explained to the citizenry so they can be knowledgably informed of the risks and benefits to their social and physical stability.* (**074-01)** [Duvall, Lois]

Comment: *I'm just wondering what does the EIS say about MOX fuel?* (**100-12**) [Loper, Mark]

Comment: *I ask that the risk of using MOX fuel be included in the EIS.* (**100-19**) [Loper, Mark]

Comment: *Energy Northwest and the Energy Department have a formal proposal to use highly dangerous plutonium fuel in this reactor. It is missing from the environmental impact statement except to acknowledge that you are aware of it. Under the National Environmental Policy Act, the NRC is required to include in the EIS the potential impacts from all related proposals. At this point in time, Energy Northwest, and a sister Federal agency, the Energy Department, have entered into agreements, and the Energy Department has entered into work orders with Pacific Northwest Lab and others to study the use of plutonium fuel in the reactor. The Energy Northwest's own technical report distributed after Fukushima, where Reactor 3 used plutonium fuel, acknowledged that if Reactor 3 had a full load of MOX or plutonium fuel, MOX for mixed oxide fuel, that it might have increased the offsite radiation dose from what is already a horrific accident by 40 percent. The region deserves to have this debated in public, not behind closed doors, not in biased briefings that never mention these risks to the Energy Northwest Utility Member Boards. And, the way to do this is to put it in the EIS with full discussion of the risks. How am I doing on time, Gerri? Thank you. The risks of using plutonium fuel are not only the risks of a severe accident. The proposal is to use the contaminated and dangerous Building at Hanford to make the plutonium fuel, and to assay it. That would lead to creation of more waste at Hanford, and more severe problems. And, there is the related issue of transportation of the weapons-grade plutonium to be made into the plutonium fuel without any debate here. It used to be when the FFTF [fast flux test facility] reactor was operating and you wanted to move plutonium fuel from the 300 area where it was fabricated to the reactor, you had a helicopter, rocket-propelled grenade guard force to move the fuel three miles. Now, we're talking about moving plutonium, weapons-grade plutonium fuel back to the region without any consideration of the security risks, and at what price?* (**100-27**) [Pollet, Gerry]

Comment: *In regard to a potential for the use of different kinds of fuel, there's a terrific process for any type of valuation going forward, and any different fuel than they're using would require an exhaustive research, must be maybe a decade in the future, if at all. So, as far as the use of a different fuel is concerned, I see that as an unnecessary roadblock in going forward.* (**100-32**) [Holder, Carl]

Comment: *Finally, I close, unfortunately you've heard a hypothesis of potential use of MOX fuel. Before anybody examines that closely, I think they better identify that it's real or not real. And, at this moment, I don't believe it's real.* (**100-42**) [Petersen, Gary]

Comment: *I'd also like to address the MOX issue. I don't know of very many light water reactors in the United States that don't have that in their core at this time. We realize that the process of burning uranium generates a little bit of plutonium. The uranium is mixed, is oxide fuel; therefore, we have mixed oxide. It's safe, it works. It will be tested when we up the percentage rates. It's a way of disposing of plutonium that is in excess.* (**100-47**) [Troyer, Gary L.]

Comment: *Energy Northwest, which runs the region's only commercial nuclear reactor located at Hanford, has been secretly planning to use the savings from plutonium fuel as was used in Fukushima in Reactor 3, which has a great risk of radiation leakage, as we all know. Energy Northwest (Telephonic interference) representing our local utilities were not required to submit documents admitting that offsite radiation doses would be higher from plutonium fuel and the likelihood of an accident will increase. (Telephonic interference) use contaminated buildings in Hanford's 300 area to fabricate plutonium fuel and create even more waste instead of cleaning up the contaminated area along the Columbia River. The environmental impact statement on relicensing the plant to run until 2043 ignored that. I'd like to insist that the risks of using this fuel be disclosed in the EIS (Telephonic interference) needs to one, disclose and consider the impact (Telephonic interference) as of September 2011, including how it's even possible Energy Northwest will ensure that (Telephonic interference) of the next 50 years.* (**100-51**) [Berlly, Bella]

Comment: *And I want to echo the previous comment on the weakening safety standards for the NRC and the proposed EIS should make an analysis of all the dangers and impact of proposals and implications available to the public for public comment, especially in regard to plutonium.* (**100-63**) [Axell, Karen]

Comment: *And, also, to address the issue of plutonium fuel, which if the Fukushima plant had been fully loaded with plutonium fuel, 40 percent greater radiation would have possibly leaked into the atmosphere.* (**100-71**) [Brennan, Colm]

Comment: *Related to your comments that they are planning to use plutonium fuel that is similar to Fukushima's reactor at Columbia Generating Station?* (**101-16**) [Morris, Nancy]

Comment: *Does the license renewal for this facility allow for a streamlined or fast track ability for the plant to make application for mixed oxide fuel use?* (**101-19**) [Bertish, Dvija M.]

Comment: *And, I wish to correct some statements that were made by others providing comments in the venue regarding mixed oxide fuel. The Executive Board of Energy Northwest received a public meeting presentation informing the Board on MOX fuel in 2009. Since then, we have received multiple public updates as to industry news information of the study of MOX fuel. Energy Northwest is not a part of a study and no decision has been made by the Executive Board to be part of a study. And, certainly, there has not been any secret meetings that were alluded to earlier in the day at this meeting. If Energy Northwest decides to move forward with a paper feasibility study, we will notify the Washington State Congressional delegation and publicly announce the decision.* (**101-38**) [Vaughn, Jacquelyn]

Comment: *I would like to call for a thorough assessment of risks of MOX.* (**101-50**) [Carlson, Kevin]

Comment: *I also really want to urge that the NRC prohibit all the use of mixed oxide fuel. There is an extreme danger of that particular form of fuel as we have certainly learned from the Fukushima disaster. I would urge that it not even be considered as a possibility in this country.* (**101-55**) [Mann, Carolyn]

Comment: *I am very concerned about the MOX fuel issue, especially in light of what Gerry said. And, by the way, I want to thank Gerry for the lengths that he went to try and enable us to be a part of this hearing through this inadequate phone process that we are going through.* (**101-63**) [Marbet, Lloyd]

Comment: *He raised a point that I was not aware of, that apparently Energy Northwest is not supplying the documents on the MOX situation or their application until after the end of the comment period. That is outrageous. I would hope that the NRC would recognize what is going on here and would extend the public comment period just as a matter of courtesy and not only that, but as an opportunity for there to be further analysis of whether in fact there is information that should be a part of this particular analysis that is taking place now, not some amendment that takes place later.* (**101-64**) [Marbet, Lloyd]

Comment: *I am greatly concerned about continuing to operate an aging plant that is fully run and that poses hundreds of risks that have not been adequately addressed in the environmental impact statement draft. The EIS failed to consider the impact of risk in the proposal to use plutonium fuel.* (**101-72**) [Chudy, Cathryn]

Response to comments 002-01, 004-01, 005-01, 005-04, 006-01, 009-04, 010-02, 019-08, 019-11, 019-20, 020-05, 021-01, 025-01, 025-04, 026-02, 027-01, 030-01, 030-05, 039-01, 039-08, 043-02, 047-01, 048-02, 051-01, 060-08, 062-05, 074-01, 100-12, 100-19, 100-27, 100-32, 100-42, 100-47, 100-51, 100-63, 100-71, 101-16, 101-19, 101-38, 101-50, 101-55, 101-63, 101-64, and 101-72: The comments relate to the potential use of mixed oxide (MOX) fuel at CGS. Sections 2.1.1 and 4.11.4 address Energy Northwest's potential use of MOX fuel. At this time, the NRC has not received an application from Energy Northwest on its plans to use MOX fuel in the future. A change in the type of fuel used at CGS would require a thorough evaluation by the NRC on the safety and environmental impacts associated with the new fuel prior to receiving approval for its use. During that review, there would be a public comment period. More information about the MOX program is available at http://www.nrc.gov/materials/fuel-cycle-fac/mox/licensing.html.

A.3.5 Editorial

Comment: *Page 2-27, Line 14. Sentence states that the Columbia River crosses the west of the CGS site. The Columbia River is actually to the east of the site.* (**032-03)** [McDonald, Scott]

Comment: *Page 2-71, Line 20. Should be spelled "McChord."* (**032-05)** [McDonald, Scott]

Comment: *Page 2-17, Line 21. Should be "Yakima Training Center." Please note that the county and city are spelled Y-A-K-I-M-A. The Native American tribe is spelled Y-A-K-A-M-A.* (**032-06)** [McDonald, Scott]

Comment: *Page 2-1, Line 16. The Energy Northwest membership now consists of 28 public utilities. Pend Oreille Public Utility District joined in January 2010 after the license renewal application (LRA) was submitted.* (**068-01)** [Javorik, Alex]

Comment: *Page 2-1, Line 19. Here, and at perhaps 15 other locations in Chapter 2, EN 2010b is cited as a reference. This should be EN 2010 since Chapter 2 lists only a single 2010 reference from Energy Northwest (see Page 2-74).* (**068-02)** [Javorik, Alex]

Comment: *Page 2-10, Line 5. The last paragraph of Section 2.1.3.2 summarizes the benefits of an environmental management system (EMS). It would be relevant to note in this section that Energy Northwest has an EMS (see SEIS Chap. 2 reference EN 2010, Sec. 5.1).* (**068-03)** [Javorik, Alex]

Comment: *Page 2-23, Line 14. The sentence would read better if "constructions project" were changed to "construction projects."* (**068-08)** [Javorik, Alex]

Comment: *Page 2-27, Line 9. Reference EN 2005a should be EN 2005.* (**068-09)** [Javorik, Alex]

Comment: *Page 2-33, Line 13. The reference to Table 2.2-3 should be to Table 2.2-4.* (**068-10**) [Javorik, Alex]

Comment: *Page 2-37, Line 20. The reference to Table 2.2-4 should be to Table 2.2-3.* (**068-11**) [Javorik, Alex]

Comment: *Page 2-44, Lines 22, 36, 41. The references to EN 2009 and EN 2010b should be to EN 2010.* (**068-16**) [Javorik, Alex]

Comment: *Page 2-69, Line 35 and Page 2-70, Lines 3, 4, 10, 44. The references to EN 2005b should be to EN 2005.* (**068-18**) [Javorik, Alex]

Comment: *Page 2-69, Line 41. The elevation in the vicinity of the power block is approximately 441 ft (134 m), not 421 ft. (See SEIS Chapter 2 ref. EN 2010, Sec. 2.4.2.)* (**068-19**) [Javorik, Alex]

Comment: *Page 4-7, Lines 37, 38. It appears that this sentence should read, "The staff did not find ... during the review of the ER (EN, 2010), the site visit, the...available information."* (**068-20**) [Javorik, Alex]

Comment: *Page 4-10, Line 21. The reference to EN 2010a should be to EN 2010. (It should be noted that Chapter 4 has references EN 2010, EN 2010a, EN 2010b, and EN 2010c. See Page 4-58. This may lead to misidentification of reference numbers in Chapter 4).* (**068-21**) [Javorik, Alex]

Comment: *Page 4-13, Line 36. The reference to EN 2009X4 should be to EN 2009a.* (**068-22**) [Javorik, Alex]

Comment: *Page 4-23, Line 19. The reference to EN 2010a should be to EN 2010.* (**068-23**) [Javorik, Alex]

Comment: *Page 4-34, Line 1. "Hanford" is misspelled.* (**068-29**) [Javorik, Alex]

Comment: *Page 4-36, Line 11. The reference to EN 2010a should be to EN 2010b.* (**068-30**) [Javorik, Alex]

Comment: *Page 4-38, Line 30. For consistency with Sections 2.1.2.1 and 4.8.2, this line should say "...in over 10 years."* (**068-31**) [Javorik, Alex]

Comment: *Page F-17, Line 6. The reference to Tables F-6 and F-7 should be to F-7 and F-8.* (**068-40**) [Javorik, Alex]

Comment: *Page 2-27, Line 14. Sentence states that the Columbia River crosses the west of the CGS site. The Columbia River is actually to the east of the site.* (**072-04)** [Albin, Lynn]

Comment: *Page 2-71, Line 20. Should be spelled "McChord."* (**072-06)** [Albin, Lynn]

Comment: *Page 2-17, Line 21. Should be "Yakima Training Center." Please note that the county and city are spelled Y-A-K-I-M-A. The Native American tribe is spelled Y-A-K-A-M-A.* (**072-07)** [Albin, Lynn]

Response to comments 032-03, 032-05, 032-06, 068-01, 068-02, 068-03, 068-08, 068-09, 068-10, 068-11, 068-16, 068-18, 068-19, 068-20, 068-21, 068-22, 068-23, 068-29, 068-30, 068-31, 068-40, 072-04, 072-06, and 072-07: The SEIS has been revised as suggested by these comments.

A.3.6 Emergency Preparedness

Comment: *Emergency planning zones and equipment for major earthquake and flooding must be upgraded.* (**060-05)** [Buchanan, Thomas]

Response to comment 060-05: There are two emergency planning zones (EPZs) around each nuclear plant—a 10-mi EPZ for plume exposure and a 50-mi EPZ for food exposure. The 10-mi EPZ is the area established as a basis for planning because, at that distance, the projected doses from most accidents would not exceed the U.S. EPA's protective action dose guidelines (1 to 5 rem). Although this issue is not within the scope of the license renewal review, it is part of the NRC's ongoing effort to ensure safety based on lessons learned from the Fukushima Dai-ichi disaster. The NRC report titled "The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident" addresses these issues (NRC, 2011b).

A.3.7 Environmental Justice

Comment: *With the close proximity to the Native American tribes, has any consideration been given to their closeness to the earth and resources and their health and safety regarding the Columbia Generating Station?* (**101-24**) [Sorgen, Jacqueline]

Response to comment 101-24: Effects of license renewal on Native American tribes are discussed in Sections 4.9.7.3 and 4.9.7.4 of the SEIS.

A.3.8 Fukushima Event

Comment: *The license renewal of the Columbia Generating Station and all other nuclear plants should be delayed until it is known fully what happened at the Fukushima disaster and safety modifications based on the findings are incorporated into the NRC review process.* (**011-01)** [Zimmermann, Warren]

Comment: *I am irate that this agenda is even on the table after Fukushima just happened 6 months ago with the same type of GE MOX reactor that was not even operating at full capacity and still the after affects will be felt for millenium to come, whether the 'experts' admit it or not!* (**019-02)** [Radiance, Chandra]

Comment: *[I insist] that the NRC halt consideration of relicensing until we know what was damaged, how much radiation was released, and why, at the Fukushima Reactors - which could take a year or more due to the severe damage and radiation.* (**019-12**) [Radiance, Chandra]

Comment: *[I ask that] no further action be taken until the risks of the Daiichi Fukushima event (and residual effects) is fully analyzed.* (**021-02)** [Boyajian, Jane]

Comment: *[I ask that] until the NRC incorporates necessary new requirements you wait to take further action and that this new information made easily available to the public at large.* (**021-03)** [Boyajian, Jane]

Comment: *After the catastrophic events at Fukushima, Japan, any plans for license renewal of this Station should be scrapped.* (**026-01)** [Wahl, Kathleen]

Comment: *Stop all relicensing until learn What and Why etc. of Fukishima. Upgrade all NRC regulations immediately to comply with new knowledge.* (**039-07)** [Jensen, Rhoda D.]

Comment: *I do not support relicensing until after we learn what was damaged and why at the Fukushima reactors, and the NRC incorporates new safety requirements.* (**051-03)** [Adman, Eric]

Comment: *It is my opinion that we should pause the relicensing process until after we learn what was damaged and why at the Fukushima reactors, and the NRC incorporates new safety requirements. I am concerned that an independent study be done to assess what actually happened to the reactors in Japan. I lived in Japan from 1968-1972. The Japanese government habitually sweeps serious health risks under the rug.* (**052-02)** [March, Leslie]

Comment: *I urge postponement of relicensing of this plant on the following grounds: The EIS does not address the plan to use the same kind of plutonium fuel that was used in Fukishima Reactor 3. All risks should be studied and disclosed, and the relicensing process should not commence until we learn what was damaged and why in Reactor 3.* (**053-01)** [Castle, Janice]

Comment: *Due to the fact that a full evaluation of the Fukushima multiple reactor accident has not been completed and the similarity in design of some aspects of the Columbia Generating Station to the Fukushima reactors, I believe you should postpone completion of this proceeding.* (**058-01)** [Johnson, Charles]

Comment: *I ask you to indefinitely postpone action until further review can be done regarding Fukushima and a specific evaluation of the CGS in light of that knowledge has been completed.* (**058-03)** [Johnson, Charles]

Comment: *Remembering Fukushima, 3.11.2011- Lessons for US Nuclear Reactor Safety. Now 8 months after the 9.0 Earthquake and Tsunami in Fukushima Japan, the resulting nuclear devastation and on-going radiation contamination, we see little celebration for any learning curve developing during the hearings conducted by NRC and Energy Northwest in Washington and Oregon States. In reviewing FOIA communications between the NRC and [Energy Northwest], we see only the NRC's request that [Energy Northwest] conduct a more concentrated review of the nuclear reactor's pipe corrosion. This is totally unacceptable. Even following some of the highlights of your own NRC Task Force Commission's review of Fukushima of July 12th, 2011, "Review of Insights from Fukushima Dai-Ichi Accident," we should assume that your Reactor Licensing Division would have studied and taken to heart several suggestions from this Task Force. For example: 1. on page viii, "low likelihood, high*

consequences events such as prolonged station BLACKOUT resulting from severe natural phenomena" ...such as seismic and flooding protection of each reactor should be planned in the worst case scenario. Given the increased research into the history of seismic activity now being studied in the Eastern Washington basin, and the impact of seismic-caused flooding, the current plan for cooling backup systems should be much longer than the current 24-hour maximum backup. 2. The Task Force's recommendation of "requiring reliable Hardened Venting Designs in the Boiling Water Reactors (BWR)"-Fukushima and CRS are the same reactors that would be more resistant to Hydrogen Gas built up and explosion if new venting were added. 3. So-called 'Spent Fuel ponds' (really, radiated fuel storage vats) according to the Task Force should "identify insights about Hydrogen Control and mitigate inside the containment and other buildings." 4. They go on to say, "Enhancing Spent Fuel pool make-up capability and instrumentation on the spent fuel pools should be improved." We must conclude that the lessons from Fukushima have landed on dead ears inside the Nuclear Reactor Licensing division of the NRC. It's not that we agree with all the statements and recommendations of NRC's Task Force. For example, at the very beginning of the Task Force Executive Summary, they say, "we appreciate(!) that an accident involving core damage and uncontrolled release of radiation to the environment, even one without significant health consequences is inherently unacceptable." We cannot accept this statement. In the document by the "Trio of Experts Outline Eight Key Concerns: ... U.S. Regulatory Response Seen as Troubling," Dr. Andrew Kanter, National PSR president says on items 3 and 4: The Japanese Government's decision to increase the maximum allowed dose for citizens of Fukushima (including Children) from 1 mSv per year to 20mSv, the equivalent of 200 chest x-rays or the maximum many countries allow for nuclear workers.., is unacceptable and remains in place despite vehement public and international pressure." He says further, "There are about 350,000 children under 18 in Fukushima Prefecture. If each of these children were exposed to the 20 mSv maximum over 2 consecutive years, the National Academy of Sciences BEIR VI report would predict 2,500 additional cancer deaths..." We want the U.S. Regulators to respond to this statement of medical impacts on Japanese children and not to forestall the serious lessons that we all should apply to our own 104 nuclear reactors in various stages of aging in their life process, within a natural environment which is much more threatening than the estimates and computer simulations have allowed for up to March 11, 2011. (**060-02)** [Buchanan, Thomas]

Comment: *Respond to the catastrophe of Fukushima's Spent Fuel Pool explosions and the three reactors' core meltdown of nuclear fuel by immediately adding additional safeguards.* (**060-04)** [Buchanan, Thomas]

Comment: *A more careful summarizing and measuring of the Fukushima disaster must be carried out by the U.S. NRC. For example, a recent Japanese estimate of the amount of Cesium releases at Fukushima has been the equivalent of 168 Hiroshima bombs' worth. Most of that Cesium has gone into the sea. We will see and may swallow many of the results of that Cesium impact for many years to come.* (**060-07)** [Buchanan, Thomas]

Comment: *We must act wisely and learn everything we can from the Fukushima disaster as it continues to unfold. Renewing the CGS license without thorough consideration of the valuable information being generated as a result of the Fukushima Daiichi disaster would be flying in the face of reason and rigorous science.* (**062-04)** [Tsongas, Theodora]

Comment: *Why is consideration of the NRC's examination of the Fukushima disaster and the impact of such a disaster on the spent fuel pools not considered in this examination of the CGS? Why is it not part of the license renewal process? If it is part of another process, why is that not transparent and referenced in this document?* (**062-13**) [Tsongas, Theodora]

Comment: *Here are some comments from the [Washington] State Department of Health. In addition to these comments, we request that you cover the NRC's findings post Fukushima and how these findings will be considered for the CGS license renewal. There is much interest in this topic.* (**072-01)** [Albin, Lynn]

Comment: *The [draft] SEIS fails completely to address the implications for aging reactors and aging reactor components of the Fukushmia Daiichi reactor accident, as does the NRC Task Force Report, and therefore fails to meet the requirements of NEPA.* (**073-02)** [Bell, Nina]

Comment: *In addition, the [draft] SEIS fails to update the possible radiation effects from an accident based on the events at the Fukushima reactor including, specifically, the distance from the plant of dispersal of radioactive materials, discussed in Item No 1 above, pages 5-7.* (**073-03)** [Bell, Nina]

Comment: *Part of my comment is we urge you to stop relicensing the plants until after we learn what caused the damage, and what happened at the Fukushima reactors.* (**100-11**) [Loper, Mark]

Comment: *I ask that no further actions be taken until the risk of the Fukushima events are fully analyzed, so that we can understand what happened there.* (**100-20**) [Loper, Mark]

Comment: *And then I ask that until the NRC incorporates necessary new requirements, to wait to take further action and that new information be made easily available to the public at large.* (**100-21**) [Loper, Mark]

Comment: *So, I think that's one thing that the NRC needs to be looking at right now, particularly in light of the fact that the Fukushima reactor was considered to be a very safe reactor by the Japanese nuclear authorities up until it had its postal meltdown. And I guess the question that you at the NRC should be asking yourselves is which of these reactors that you're now rubber stamping and relicensing is -- could be in 30 years, over the next 30 years, I should say, the next Fukushima, or the next Chernobyl. Obviously, it wouldn't be a Chernobyl. It's not a Chernobyl design, but you do have some Fukushima type reactors. Several things have already been discussed. And there are similarities to designs between the reactor at Hanford and some of the problematic factors at Fukushima. So, that being said, that's one of the technical arguments, but that is something that I think the NRC should seriously consider, consider these relicensings. And, should, in my opinion, delay relicensing this reactor and all other reactors until -- Fukushima, and what scenarios might create a similar situation at one of our reactors.* (**100-35**) [Johnson, Charles]

Comment: *Two, stop licensing until we learn what was damaged and why at the Fukushima reactor, and that NRC incorporates new -- and until the NRC incorporates new safety requirements.* (**100-52**) [Berlly, Bella]

Comment: *You should stop the relicensing process until the Fukushima accident is analyzed as to exactly what was damaged there and why.* (**100-65**) [Axell, Karen]

Comment: *The first is in regard to your comments about Fukushima and the words you used were consideration of response to Fukushima is "not related." Aren't we here to give comments and for you to respond to concerns about how consideration of safety issues raised by Fukushima may be related to safety, including site-specific issues for the Columbia Generating Station that have never been considered in any other EIS?* (**101-01)** [Pollet, Gerry]

Comment: *Human health is the environment, too, under NEPA and so I am concerned that whether you are in the room or on the phone, people are going to have the impression we can't talk about this. But if the concern of someone is, for instance, Fukushima showed that we have not considered full range of accidents involving spent fuel pools sitting above reactor vessels, which is the condition here at this reactor, then that is a potential serious environmental impact to be addressed. Wouldn't that fit within the scope of what people should be commenting on?* (**101-02**) [Pollet, Gerry]

Comment: *I am interested in the actual process of the NRC's examination of Fukushima and how you folks might have taken some of these things into account. It doesn't seem with anything has been revealed from the Fukushima accident so far. For example, the actual condition of the spent fuel pools, where they are stored, what kind of control they have over them, etcetera, have been applied by the NRC to conditions in this country. Do you think that is significant? And why didn't you include some of the extrapolations that have gone on with the task force?* (**101-12**) [Buchanan, Thomas]

Comment: *Just to clarify my comments, my comments were around the process of the licensing review. And to the extent that Fukushima is a game changer and it does require, for example, a longer run view of earthquake activity in a certain activity, it should I think, the backup systems, that was asked a little earlier, should be a part of the review, etcetera. I think these are process issues that at least were addressed initially by the NRC's Task Force that went to Fukushima that people should recognize this within the NRC and begin to integrate these into any license application, including the one that we have right now. This shouldn't be just put aside until some report is produced out of Fukushima next year. NRC has already seen the importance and the seriousness of what has happened in Japan and probably should be much more alert about integrating it into their reviews and stopping those reviews if they haven't been integrated.* (**101-13**) [Buchanan, Thomas]

Comment: *You mentioned that the review based on the response to the Fukushima disaster caused the NRC to review safety protocols for all existing U.S. power plants. And, you came to the conclusion that the review did not call for any closure of any existing plants in operation. And my question regarding that is did that account for current failures of any individual existing power plants, such as known leaks or explosive problems or critical failures, safety failures that may have happened let's say over the past couple of years? Or, was there anything noting current placement on very active fault lines?* (**101-22**) [Bertish, Dvija M.]

Comment: *Were there active failures such as releases of radioactive waste to rivers and streams or some sort of plume that exists or failed pipes beneath an existing facility that are suspected of leaking, doesn't that advance those facilities up the chain in terms of risk factor and call into question the very safety of such an existing facility?* (**101-23**) [Bertish, Dvija M.]

Comment: *This part that you spoke about in response to Fukushima and you said that there would be 12 recommendations -- that there were 12 recommendations for improvement regarding safety. And, I guess I just wanted, you know, I know the woman was saying that it was tangential but to me it is not. So I just want to find out is there any guarantee that any or all of those recommendations for improvement would be adopted? I mean how can I know that they will, any of them be adopted?* (**101-25**) [Green, Holly]

Comment: *Number one, I have listened to this from all these great minds and from all these great opinions. The thing that is very clear to me is that we have to absolutely stop relicensing until after we are educated and more importantly learn from what and why caused Fukushima and the damage and the catastrophe that happened there in Japan. We are still receiving*

reports and testimonials that are just heartbreaking. And, in my opinion, it is imperative that the NRC implement, adopt, and agree, and more importantly enforces new safety measures surrounding the knowledge that we will learn and gain from Fukushima's disaster. Anything short of that, in my opinion, is a public safety catastrophic risk. (**101-35**) [Stierling, Rachel]

Comment: *So, let's start with the fact that this EIS needs to be halted until we know why Fukushima happened, how it happened, what the impacts were, and what specific equipment failures led to which of those impacts. It is wrong, simply wrong to claim that Fukushima is not related to this environmental review.* (**101-41**) [Pollet, Gerry]

Comment: *I would like to urge that the NRC hold consideration of relicensing the Columbia Generating Station until the Environmental Impact Review of the Fukushima Reactor is completed. It seems that there is a great deal of information that is continually coming out each day about what has taken place and how it is affecting the individuals through the environment there. And it seems imperative that that information be reviewed and that the whole process that is happening right with regard to relicensing Columbia Generating Station just be put on hold until such time as this information can be processed and understood as it relates to our local concerns.* (**101-54**) [Mann, Carolyn]

Comment: *For the citizens of the Northwest, owners of the Columbia Generating Station, and the world, Fukushima is a wake-up call to the world as to the dangerous world we have created. And now we must take responsibility for the arcane nuclear energy causing global climate change. It is time to get to the truth of how gravely dangerous the chemicals are.* (**101-80**) [Panfilio, Madya]

Response to comments 011-01, 019-02, 019-12, 021-02, 021-03, 026-01, 039-07, 051-03, 052-02, 053-01, 058-01, 058-03, 060-02, 060-04, 060-07, 062-04, 062-13, 072-01, 073-02, 073-03, 100-11, 100-20, 100-21, 100-35, 100-52, 100-65, 101-01, 101-02, 101-12, 101-13, 101-22, 101-23, 101-25, 101-35, 101-41, 101-54, and 101-80:

On March 11, 2011, a massive earthquake off the east coast of Honshu, Japan, produced a devastating tsunami that struck Fukushima. The six-unit Fukushima Dai-ichi nuclear power plant was directly impacted by these events. The resulting damage caused the failure of several of the units' safety systems needed to maintain cooling water flow to the reactors. As a result of the loss of cooling, the fuel overheated, and there was a partial meltdown of the fuel contained in several of the reactors. Damage to the systems and structures containing reactor fuel resulted in the release of radioactive material to the surrounding environment. The radioactive releases from the damaged reactors have been partially contained, and work is ongoing to fully contain and terminate radioactive releases into the environment.

In response to the earthquake, tsunami, and resulting reactor accidents at Fukushima Dai-ichi (hereafter referred to as the "Fukushima events"), the Commission directed the staff to convene an agency task force of senior leaders and experts to conduct a methodical and systematic review of the relevant NRC regulatory requirements, programs, and processes, including their implementation, and to recommend whether the agency should make near-term improvements to its regulatory system. As part of the short-term review, the task force concluded that, while improvements are expected to be made as a result of the lessons learned from the Fukushima events, the continued operation of nuclear power plants and licensing activities for new plants do not pose an imminent risk to public health and safety (NRC, 2011b).

During the time that the task force was conducting its review, groups of individuals and non-governmental organizations petitioned the Commission to suspend all licensing decisions in

order to conduct a separate, generic NEPA analysis to determine whether the Fukushima events constituted "new and significant information" under NEPA that must be analyzed as part of environmental reviews. The Commission found the request premature and noted, "In short, we do not know today the full implications of the [Fukushima] events for U.S. facilities."[1] However, the Commission found that if "new and significant information comes to light that requires consideration as part of the ongoing preparation of application-specific NEPA documents, the agency will assess the significance of that information, as appropriate."[2] The Federal courts of appeal and the Commission have interpreted NEPA such that an EIS must be updated to include new information only when that new information provides "a seriously different picture of the environmental impact of the proposed project from what was previously envisioned."[3]

Based on the agency's current knowledge of the Fukushima events, it does not constitute information that would reveal a seriously different picture of the environmental impacts of severe accidents (as compared to the severe accident parameters analyzed in the GEIS) as to require specific consideration in this SEIS. Nevertheless, the NRC will continue to evaluate the need to make improvements to existing regulatory requirements based on the task force report and additional studies and analyses of the Fukushima events as more information is learned. To the extent that any revisions are made to NRC regulatory requirements, they would be made applicable to nuclear power reactors regardless of whether or not they have a renewed license. Therefore, no additional analyses have been performed in this SEIS as a result of the Fukushima events.

Comment: *Loss of power backup emergencies must be greater than a 24-hour scenario.* (**060-06**) [Buchanan, Thomas]

Response to comment 060-06: The NRC SBO rule (10 CFR 50.63) requires that each nuclear power plant must be able to cool the reactor core and maintain containment integrity for a specified duration of an SBO (defined in 10 CFR 50.2, "Definitions," as a complete loss of required onsite and offsite alternating current (AC) electrical power). The specified duration is based on the following factors:

- the redundancy of the onsite emergency ac power sources
- the reliability of the onsite emergency ac power sources
- the expected frequency of loss of offsite power
- the probable time needed to restore offsite power

NRC Regulatory Guide (RG) 1.155, "Station Blackout," describes an acceptable means to comply with 10 CFR 50.63. It primarily addresses the following areas:

- maintaining highly reliable onsite AC electric power systems
- developing procedures and training to restore offsite and onsite emergency AC power should either one or both become unavailable

1 Union Electric Co. d/b/a Ameren Missouri (Callaway Plant, Unit 2), CLI-11-05, (Sept. 9, 2011). http://www.nrc.gov/reading-rm/doc-collections/commission/orders/2011/
2 Id. at 30-31.
3 Id. at 31 (quoting Hydro Resources, Inc. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 373 (1989))). The Commission also noted that it can modify a facility's operating license outside of a renewal proceeding and made clear that "it will use the information from these activities to impose any requirement it deems necessary, irrespective of whether a plant is applying for or has been granted a renewed operating license." Id. at 26-27.

- ensuring that plants can cope with an SBO for some period of time based on the probability of occurrence of an SBO, as well as the capability for restoring AC power to the site in a timely fashion

The RG provides an acceptable method for determining the specified duration for withstanding an SBO considering the four factors identified in The Rule language (10 CFR 50.63(a)(1)(i)–(iv)). The method described in RG 1.155 results in a minimum acceptable SBO duration capability ranging from 2–16 hours. The result for all operating plants was a coping duration of 4–8 hours. CGS is required to maintain an SBO duration capability of 4 hours. Although this issue is not within the scope of the license renewal environmental review, it is part of the NRC's ongoing effort to ensure safety based on lessons learned from the Fukushima Dai-ichi disaster. The NRC report titled "The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident" addresses these issues (NRC, 2011b).

Comment: *We hereby attach and incorporate by reference the following documents: 1. Petition for Hearing and Leave to Intervene in Operating License Renewal for Energy Northwest's Columbia Generating Station, August 22, 2011, pages 5 - 7, and from page 17 to the end; 2. Reply Memorandum Regarding Timeliness and Admissibility of New Contentions Seeking Consideration of Environmental Implications of Fukushima Task Force Report in Individual Reactor Licensing Proceedings, September 13, 2011; 3. Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident, August 8, 2011; 4. Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention, October 28, 2011; 5. Declaration of Dr. Aijun Makhijani in Support of Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decsisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident, April 19, 2011; 6. Blakely et al, Connecting the Yakima fold and thrust belt to active faults in the Puget Lowland, Washington, Journal of Geophysical Research, July 28, 2011; and 7. Petition for Review of LBP-11-27.* (**073-01)** [Bell, Nina]

Response to comment 073-01: The commenter incorporates seven documents by reference. Six of these documents have already been submitted to the NRC and considered through the adjudicatory process. The NRC considered the petition dated August 22, 2011 (ADAMS Accession No. ML11234A532) and the declarations dated April 19, 2011, (ADAMS Accession No. ML111101285), and August 8, 2011 (Assession No. ML11234A531), and responded on September 15, 2011 (ADAMS Assession No. ML11258A320). The memorandum dated September 13, 2011 (ADAMS Assession No. ML11265A079) was filed in the adjudicatory process and considered but no further response was required by the NRC. The NRC considered the motion dated October 28, 2011 (ADAMS Assession No. ML11301A362), and responded on November 7, 2011 (ADAMS Assession No. ML11311A303). The NRC considered the petition dated November 2, 2011 (ADAMS Assession No. ML11306A282), and responded on November 14, 2011 (ADAMS Assession No. ML11318A274). On March 16, 2012 and documented in CLI-12-07 (http://www.nrc.gov/reading-rm/doc-collections/commission/orders/2012/2012-07cli.pdf), the Commission denied the petition based in part to the Petitioners having not identified environmental effects from the Fukushima Dai-ichi events that can be concretely evaluated at this time.

For a discussion of the article by Blakely et al (ADAMS Assession No. ML11363A047), please see the response to comment 039-04.

Comment: *Is the facility at the Columbia Generating Station the same model type and the same genre as the Fukushima plant and built by the same designers?* (**101-21**) [Bertish, Dvija M.]

Response to comment 101-21: CGS is a boiling-water reactor (BWR) with Mark-II containment designed by General Electric (GE) and constructed by Bechtel, Inc. Fukushima Dai-ichi reactors 1–5 are BWRs with Mark I containment and Fukushima Dai-ichi reactor 6 is a BWR with Mark II containment. The Fukushima Dai-ichi reactors were designed by GE and constructed by the Tokyo Electric Power Company.

A.3.9 Human Health Issues

Comment: *The chemical and, radioactive leaks are already dangerous and projected to be high enough to cause 5 [percent] of Native American children.* (**019-18**) [Radiance, Chandra]

Comment: *The chemical and radioactive leak has already been projected to be high enough to cause 5 percent.* (**100-56**) [Berlly, Bella]

Comment: *Currently, the chemical and radioactive waste are so dangerous that we predict a 20 percent rate in cancer increases in the Native American children, simply because they are drinking the groundwater from the land they come from and the land they live on. And as a taxpayer and citizen of Washington State, as a Native American myself, and as a mother, relicensing at this point with no further review is nothing short of negligence in the first type of way.* (**101-37**) [Stierling, Rachel]

Response to comments 019-18, 100-56, and 101-37: Based on the radiological information from CGS, DOE, and Washington Department of Health and the NRC staff's evaluation, there is no significant impact from radioactive effluents to members of the public from the operation of CGS on the Hanford Site.

The NRC's primary mission is to protect the public health and safety and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities. The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation (i.e., cancer and other biological impacts). The limits are based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and international organizations. The NRC actively participates and monitors the work of these organizations to keep current on the latest information in radiation protection.

Although radiation may cause cancers at high doses, currently there are no reputable scientifically conclusive data that unequivocally establish the occurrence of cancer following exposure to low doses below about 10 rem (0.1 Sv). However, radiation protection experts conservatively assume that any amount of radiation may pose some risk of causing cancer or a severe hereditary effect and that the risk is higher for higher radiation exposures. Therefore, a linear, no-threshold dose response relationship is used to describe the relationship between radiation dose and detriments such as cancer induction. Simply stated, any increase in dose, no matter how small, results in an incremental increase in health risk. This theory is accepted by the NRC as a conservative model for estimating health risks from radiation exposure, recognizing that the model probably overestimates those risks. Based on this theory, the NRC conservatively establishes limits for radioactive effluents and radiation exposures for workers and members of the public. While the public dose limit in 10 CFR Part 20 is 100 mrem (1 mSv) for all facilities licensed by the NRC, the NRC has imposed additional constraints on nuclear

power reactors. Each nuclear power reactor has enforceable license conditions that limit the total annual whole body dose to a member of the public outside the facility to 25 mrem (0.25 mSv). The amount of radioactive material released from nuclear power facilities is well measured, well monitored, and known to be very small. The doses of radiation that are received by members of the public as a result of exposure to nuclear power facilities are so low (i.e., less than a few millirem) that resulting cancers attributed to the radiation have not been observed and would not be expected.

Radiation doses to members of the public from the current operations of CGS were evaluated in the draft SEIS in Section 4.8.2, "Radiological Impacts of Normal Operations." In that section, the staff reviewed the radioactive releases from CGC (i.e., radioactive gaseous and liquid effluents, radiation from radioactive waste storage buildings, radiological impacts from refueling and maintenance activities, and inadvertent leaks of radioactive liquids). Based on its review, the staff concluded that the radiological impacts to members of the public were within dose standards specified in NRC's and EPA's dose standards.

In addition to radioactive effluents, the staff also evaluated CGS's REMP. The REMP quantifies the environmental impacts associated with radioactive effluent releases from the plant. The REMP monitors the environment over time, starting before the plant operates to establish background radiation levels and throughout its operating lifetime to monitor radioactivity in the local environment. The REMP provides a mechanism for determining the levels of radioactivity in the environment to ensure that any accumulation of radionuclides released into the environment will not become significant as a result of plant operations. The REMP also measures radioactivity from other nuclear facilities in the area (i.e., Hanford). Thus, the REMP monitors the cumulative impacts from all sources of radioactivity in the vicinity of CGS. To obtain information on radioactivity around the plant, samples of environmental media (e.g., Columbia River water, groundwater, drinking water, air, milk, locally grown crops, river sediment, and fish) are collected from areas surrounding the plant for analysis to measure the amount of radioactivity, if any, in the samples. The media samples reflect the radiation exposure pathways to the public from radioactive effluents released by CGS and from background radiation (i.e., cosmic sources, naturally occurring radioactive material, including radon and global fallout). The REMP supplements the Radioactive Effluent Monitoring Program by verifying that measurable concentrations of radioactive materials and levels of radiation in the environment are not higher than expected when compared against data on the amount of radioactive effluent discharged. As part of its license renewal environmental review for CGS, the staff reviewed 5 years (2005–2009) of REMP reports to look for adverse data or evidence of a buildup of radioactivity in the environment. The staff's review concluded that there was no evidence of significant impact to the environment due to CGS operation in the plant intake, plant discharge, or river or drinking water results.

For the Hanford Site, Federal, state, and local government agencies monitor and enforce compliance with applicable environmental regulations. Major agencies include the U.S. EPA, Washington State Department of Ecology, Washington State Department of Health (WDOH), and Benton Clean Air Agency. These agencies issue permits, review compliance reports, participate in joint monitoring programs, inspect facilities and operations, and oversee compliance with regulations.

NRC staff reviewed the Hanford Site U.S. DOE Environmental Reports for the years 2005–2008 (the latest report available at the time of the review). The staff's focus was on the radiological environmental monitoring data that assesses the potential impact to areas and members of the public beyond the Hanford Site boundary.

The following is a brief summary of the U.S. DOE Hanford Site radiological environmental monitoring data from Section 4.8.2 of the SEIS:

Columbia River water and sediment samples were collected from multiple Hanford Reach sampling points and from locations upstream and downstream of the Hanford Site. The samples were analyzed for radioactive contaminants. As in past years, small amounts of radioactive materials were detected downriver from the Hanford Site. However, the amounts were far below Federal and state limits. During 2008, there was no indication of any deterioration of Columbia River water or sediment quality resulting from operations at the Hanford Site.

The groundwater beneath the Hanford Site discharges to the Columbia River along the Hanford Site shoreline. Samples of spring water and sediment were collected at locations along the Hanford Reach. Measurements of radiological contaminants in samples collected at the shoreline springs were less than applicable U.S. DOE concentration guides. During 2008, annual average concentrations of all monitored radionuclides in Hanford Site drinking water were below Federal and state maximum allowable contaminant levels. During 2008, annual average concentrations of all monitored radionuclides in Hanford Site drinking water were below Federal and state maximum allowable contaminant levels.

Liquid waste released to the ground at the Hanford Site during many years of nuclear materials production has reached the onsite groundwater. Radioactive contaminants include tritium, Sr-90, Tc-99, I-129, and uranium. Currently, groundwater contaminant levels are greater than drinking water standards beneath 12 percent of the area of the Hanford Site. The U.S. DOE report states that the levels are decreasing with time due to radioactive decay and dispersion. However, site groundwater is not a source of public drinking water and does not significantly affect offsite drinking water sources such as the Columbia River and city wells.

In addition to the REMPs performed by CGS and the U.S. DOE, the WDOH also conducts an Environmental Radiation Oversight Program on the Hanford Site. Since 1985, the WDOH's Hanford Environmental Radiation Oversight Program has participated with the U.S. DOE in the collection of environmental samples on or near the Hanford Site. The purpose of the program is to independently verify the quality of U.S. DOE environmental monitoring programs at the Hanford Site and to assess the potential for public health impacts.

For 2008, WDOH reported that most environmental samples it analyzed have radioactivity concentrations that are either below detection limits or consistent with background. A few samples have concentrations elevated above background; however, in most cases the concentrations are consistent with historical trends. In summary, the 2008 WDOH report states that while Hanford operations have resulted in radionuclides entering the environment, the data from the WDOH oversight program show that public exposure to radioactivity from Hanford is far below regulatory limits.

Although a number of studies of cancer incidence in the vicinity of nuclear power facilities have been conducted, there are no studies to date that are accepted by the scientific community that show a correlation between radiation dose from nuclear power facilities and cancer incidence in the general public. The following is a listing of radiation health studies that the NRC recognizes:

- In 1990, at the request of Congress, the National Cancer Institute (NCI) conducted a study of cancer mortality rates around 52 nuclear power plants and 10 other nuclear facilities. The study covered the period from 1950 to 1984 and evaluated the change in mortality rates before and during facility operations. The study concluded there was no

evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby.

- In June 2000, investigators from the University of Pittsburgh found no link between radiation released during the 1979 accident at Three Mile Island power plant and cancer deaths among nearby residents. Their study followed 32,000 people who lived within 5 mi of the plant at the time of the accident.
- The American Cancer Society, in 2000, concluded that although reports about cancer clusters in some communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. Likewise, there is no evidence that links strontium-90 with increases in breast cancer, prostate cancer, or childhood cancer rates. Radiation emissions from nuclear power plants are closely controlled and involve negligible levels of exposure for nearby communities.
- The Connecticut Academy of Sciences and Engineering, in January 2001, issued a report on a study around the Haddam Neck nuclear power plant in Connecticut and concluded radiation emissions were so low as to be negligible and found no meaningful associations to the cancers studied.
- Also in 2001, the Florida Bureau of Environmental Epidemiology reviewed claims that there are striking increases in cancer rates in southeastern Florida counties caused by increased radiation exposures from nuclear power plants. However, Florida officials, using the same data to reconstruct the calculations on which the claims were based, were not able to identify unusually high rates of cancers in these counties compared with the rest of the state of Florida and the Nation.
- In 2000, the Illinois Public Health Department compared childhood cancer statistics for counties with nuclear power plants to similar counties without nuclear plants, and it found no statistically significant difference.

On April 7, 2010, the NRC announced that it asked the National Academy of Sciences (NAS) to perform a state-of-the-art study on cancer risk for populations surrounding nuclear power facilities (ADAMS Accession No. ML100970142). The NAS has a broad range of medical and scientific experts who can provide the best available analysis of the complex issues involved in discussing cancer risk and commercial nuclear power plants. The NAS is a non-governmental organization chartered by the U.S. Congress to advise the Nation on issues of science, technology, and medicine. Through the National Research Council and Institute of Medicine, it carries out studies independently of the Government, using processes designed to promote transparency, objectivity, and technical rigor. More information on its methods for performing studies is available at http://www.nationalacademies.org/studycommitteprocess.pdf.

The NAS study will update the 1990 U.S. National Institutes of Health NCI report, “Cancer in Populations Living Near Nuclear Facilities” (NCI, 1990). The study’s objectives are to:

- evaluate whether cancer risk is different for populations living near nuclear power facilities
- include cancer occurrence
- develop an approach to assess cancer risk in geographic areas that are smaller than the county level
- evaluate the study results in the context of offsite doses from normal reactor operations

The study began in the summer of 2010 and is expected to be completed within 3 years.

Comment: *Nuclear is neither clean nor green. I learned of the personal impacts on humans from 9 months of interviewing people all over Western Washington who had direct experience with the health effects of living near Hanford or had relatives who were down wind or along the Columbia River down stream from Hanford.* (**020-04)** [DiPeso, Wendy]

Comment: *We own this reactor. The public has a right to say no to recommissioning this reactor, and to demand conservation and renewable energy in the place of nuclear power, which has done nothing but bring birth defects, future ruin, earth despoiling, water quality loss, and crop damage to every place in which it has reared its ugly, obsolete head.* (**030-04)** [Graham, Holly]

Comment: *I am aware of the ramifications of a CANCER DIAGNOSIS: I have been living with Cancer since 1976. (Stage IV, since 1987; metastatic disease since 2005). Do you have any idea what CANCER is REALLY LIKE? There are people who will live/or/die by your decision. I can put a 'HUMAN FACE' on the results of what YOU are planning to do. Can YOU say the SAME.* (**047-02)** [Sorgen, Jacqueline]

Comment: *Do not gloss over the medical consequences of Fukushima, Three Mile Island or Chernobyl's radiation releases. There is no such thing as a safe threshold of radioactive releases from nuclear power. The NRC needs to build their models of health damage from their nuclear power stations with the lack of a "safe threshold" in mind.* (**060-10**) [Buchanan, Thomas]

Comment: *General Comment. The draft GEIS does not do any analysis based on Executive Order [EO] 13045, Protection of Children from Environmental Health Risks and Safety Risks. In the document, the only mention of schools concerns public schools and their enrollment but ignores the private schools in the area. Also, it should be noted that within eight miles of CGS are at least 2 schools. Country Haven Academy is a private school and Edwin Markham elementary is a public school. Combined enrollment is around 300 students. Impact analysis should be in accordance with EO 13045. It is acknowledged that NRC regulations consider radio-sensitivity differences of gender and age, however an EIS considers all effects to the environment, just not the radiological. Analysis of non-nuclear alternatives would therefore not consider health of children in this EIS. Also, although the NRC can disregard EO 13045 as an independent regulatory agency, it would seem to be an incomplete analysis of the proposed action and the alternatives.* (**072-09)** [Albin, Lynn]

Comment: *As far as cancer goes, on a scale of one to ten using National Cancer Institute statistics going back to 1950, and hopefully this information will be included in the document. Cancer is rated on a scale of one to ten, ten being highest, how much cancer per unit of population, for example, in the State of Washington. It goes county by county across the United States. There is only one county in the State of Washington that rates a ten out of ten being highest, more incidents of cancer per person than any other county in the state, and that is King County. At the Hanford Site, we rate a five out of ten, which is average. Across the river in Franklin County, we rate a four out of ten, which is below average. And, I hope the document takes these items into consideration.* (**100-17**) [Oliver, Marlene]

Comment: *And one other issue and that is that I would hope that much more consideration be given to the medical consequences of radiation exposure to individuals over the short-term, as well as long term and involve radiation as it is experienced in the environment and internal radiation due to contaminated food, water, such things as this.* (**101-58**) [Mann, Carolyn]

Response to comment 020-04, 030-04, 047-02, 060-10, 072-09, 100-17, and 101-58: The NRC's mission is to protect the public health and safety and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities. The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects (i.e., cancer and other biological impacts) of radiation. The limits are based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and international organizations. The NRC actively participates and monitors the work of these organizations to keep current on the latest information in radiation protection.

Although radiation may cause cancers at high doses, currently there are no reputable scientifically conclusive data that unequivocally establish the occurrence of cancer following exposure to low doses, below about 10 rem (0.1 Sv). However, radiation protection experts conservatively assume that any amount of radiation may pose some risk of causing cancer or a severe hereditary effect and that the risk is higher for higher radiation exposures. Therefore, a linear, no-threshold dose response relationship is used to describe the relationship between radiation dose and detriments such as cancer induction. Simply stated, any increase in dose, no matter how small, results in an incremental increase in health risk. This theory is accepted by the NRC as a conservative model for estimating health risks from radiation exposure, recognizing that the model probably over-estimates those risks. Based on this theory, the NRC conservatively establishes limits for radioactive effluents and radiation exposures for workers and members of the public, taking into account both age and gender when calculating those limits. While the public dose limit in 10 CFR Part 20 is 100 mrem (1 mSv) for all facilities licensed by the NRC, the NRC has imposed additional constraints on nuclear power reactors. Each nuclear power reactor has enforceable license conditions that limit the total annual whole body dose to a member of the public outside the facility to 25 mrem (0.25 mSv). The amount of radioactive material released from nuclear power facilities is well measured, well monitored, and known to be very small. The doses of radiation that are received by members of the public as a result of exposure to nuclear power facilities are so low (i.e., less than a few millirem) that resulting cancers attributed to the radiation have not been observed and would not be expected.

Radiation doses to members of the public from the current operations of Columbia Generating Station (CGS) were evaluated in the draft SEIS in section 4.8.2, Radiological Impacts of Normal Operations. In that section the staff reviewed the radioactive releases from CGS (i.e., radioactive gaseous and liquid effluents, radiation from radioactive waste storage buildings, radiological impacts from refueling and maintenance activities, and inadvertent leaks of radioactive liquids). Based on its review the staff concluded that the radiological impacts to members of the public were within dose standards specified in NRC's and EPA's dose standards.

In addition to radioactive effluents, the staff also evaluated CGS's radiological environmental monitoring program (REMP). The REMP quantifies the environmental impacts associated with radioactive effluent releases from the plant. The REMP monitors the environment over time, starting before the plant operates to establish background radiation levels and throughout its operating lifetime to monitor radioactivity in the local environment. The REMP provides a mechanism for determining the levels of radioactivity in the environment to ensure that any accumulation of radionuclides released into the environment will not become significant as a result of plant operations. The REMP also measures radioactivity from other nuclear facilities in the area (i.e., Hanford). Thus, the REMP monitors the cumulative impacts from all sources of radioactivity in the vicinity of CGS. To obtain information on radioactivity around the plant, samples of environmental media (e.g., Columbia River water, groundwater, drinking water, air,

milk, locally grown crops, river sediment, and fish) are collected from areas surrounding the plant for analysis to measure the amount of radioactivity, if any, in the samples. The media samples reflect the radiation exposure pathways to the public from radioactive effluents released by CGS and from background radiation (i.e., cosmic sources, naturally occurring radioactive material, including radon and global fallout). The REMP supplements the radioactive effluent monitoring program by verifying that measurable concentrations of radioactive materials and levels of radiation in the environment are not higher than expected when compared against data on the amount of radioactive effluent discharged. As part of its license renewal environmental review for CGS, the staff reviewed five years (2005-2009) of REMP reports to look for adverse data or evidence of a buildup of radioactivity in the environment. The staff's review concluded that there was no evidence of significant impact to the environment due to CGS operation in the plant intake, plant discharge, or river or drinking water results.

For the Hanford Site, Federal, State, and local government agencies monitor and enforce compliance with applicable environmental regulations. Major agencies include the U.S. Environmental Protection Agency, Washington State Department of Ecology, Washington State Department of Health (WDOH), and Benton Clean Air Agency. These agencies issue permits, review compliance reports, participate in joint monitoring programs, inspect facilities and operations, and oversee compliance with regulations.

The staff reviewed the Hanford Site U.S. DOE Environmental Reports for the years 2005-2008. The staff's focus was on the radiological environmental monitoring data that assesses the potential impact to areas and members of the public beyond the Hanford Site boundary.

The following is a brief summary, from section 4.8.2 of the DSEIS, of the U.S. DOE Hanford Site radiological environmental monitoring data:

For Columbia River water and sediment samples were collected from multiple Hanford Reach sampling points and from locations upstream and downstream of the Hanford Site. The samples were analyzed for radioactive contaminants. As in past years, small amounts of radioactive materials were detected downriver from the Hanford Site. However, the amounts were far below Federal and State limits. During 2008, there was no indication of any deterioration of Columbia River water or sediment quality resulting from operations at the Hanford Site.

The groundwater beneath the Hanford Site discharges to the Columbia River along the Hanford Site shoreline. Samples of spring water and sediment were collected at locations along the Hanford Reach. Measurements of radiological contaminants in samples collected at the shoreline springs were less than applicable DOE concentration guides. During 2008, annual average concentrations of all monitored radionuclides in Hanford Site drinking water were below Federal and State maximum allowable contaminant levels. During 2008, annual average concentrations of all monitored radionuclides in Hanford Site drinking water were below Federal and State maximum allowable contaminant levels.

Liquid waste released to the ground at the Hanford Site during many years of nuclear materials production has reached the onsite groundwater. Radioactive contaminants include tritium, Sr-90, Tc-99, I-129, and uranium. Currently, groundwater contaminant levels are greater than drinking water standards beneath 12 percent of the area of the Hanford Site. The U.S. DOE report states that the levels are decreasing with time due to radioactive decay and dispersion. However, site groundwater is not a source of public drinking water and does not significantly affect offsite drinking water sources such as the Columbia River and city wells.

In addition to the REMPs performed by CGS the U.S. DOE, the Washington State Department of Health's (WDOH) also conducts an environmental radiation oversight program on the Hanford Site. Since 1985, the WDOH's Hanford Environmental Radiation oversight program has participated with the DOE in the collection of environmental samples on or near the Hanford Site. The purpose of the program is to independently verify the quality of DOE environmental monitoring programs at the Hanford Site and to assess the potential for public health impacts.

For 2008, WDOH reported that most environmental samples it analyzed have radioactivity concentrations that are either below detection limits or consistent with background. A few samples have concentrations elevated above background; however, in most cases the concentrations are consistent with historical trends. In summary, the 2008 WDOH report states that while Hanford operations have resulted in radionuclides entering the environment, the data from the WDOH oversight program show that public exposure to radioactivity from Hanford is far below regulatory limits.

Although a number of studies of cancer incidence in the vicinity of nuclear power facilities have been conducted, there are no studies to date that are accepted by the scientific community that show a correlation between radiation dose from nuclear power facilities and cancer incidence in the general public. The following is a listing of radiation health studies that the NRC recognizes:

- In 1990, at the request of Congress, the National Cancer Institute conducted a study of cancer mortality rates around 52 nuclear power plants and 10 other nuclear facilities. The study covered the period from 1950 to 1984, and evaluated the change in mortality rates before and during facility operations. The study concluded there was no evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby.
- In June 2000, investigators from the University of Pittsburgh found no link between radiation released during the 1979 accident at Three Mile Island power plant and cancer deaths among nearby residents. Their study followed 32,000 people who lived within five miles of the plant at the time of the accident.
- The Connecticut Academy of Sciences and Engineering, in January 2001, issued a report on a study around the Haddam Neck nuclear power plant in Connecticut and concluded radiation emissions were so low as to be negligible and found no meaningful associations to the cancers studied.
- The American Cancer Society in 2000 concluded that although reports about cancer clusters in some communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. Likewise, there is no evidence that links strontium-90 with increases in breast cancer, prostate cancer, or childhood cancer rates. Radiation emissions from nuclear power plants are closely controlled and involve negligible levels of exposure for nearby communities.
- Also in 2001, the Florida Bureau of Environmental Epidemiology reviewed claims that there are striking increases in cancer rates in southeastern Florida counties caused by increased radiation exposures from nuclear power plants. However, using the same data to reconstruct the calculations, on which the claims were based, Florida officials were not able to identify unusually high rates of cancers in these counties compared with the rest of the state of Florida and the nation.

- In 2000, the Illinois Public Health Department compared childhood cancer statistics for counties with nuclear power plants to similar counties without nuclear plants and found no statistically significant difference.

On April 7, 2010, the NRC announced that it asked the National Academy of Sciences (NAS) to perform a state-of-the-art study on cancer risk for populations surrounding nuclear power facilities (ADAMS Accession No. ML100970142). The NAS has a broad range of medical and scientific experts who can provide the best available analysis of the complex issues involved in discussing cancer risk and commercial nuclear power plants. The NAS is a nongovernmental organization chartered by the U.S. Congress to advise the nation on issues of science, technology, and medicine. Through the National Research Council and Institute of Medicine, it carries out studies independently of the Government, using processes designed to promote transparency, objectivity, and technical rigor. More information on its methods for performing studies is available at ttp://www.nationalacademies.org/studycommitteprocess.pdf.

The NAS study will update the 1990 U.S. National Institutes of Health National Cancer Institute (NCI) report, "Cancer in Populations Living Near Nuclear Facilities." The study's objectives are to: 1) evaluate whether cancer risk is different for populations living near nuclear power facilities; 2) include cancer occurrence; 3) develop an approach to assess cancer risk in geographic areas that are smaller than the county level; and 4) evaluate the study results in the context of offsite doses from normal reactor operations. The study began in the summer of 2010 and is expected to be completed within three years. The revised GEIS contains a discussion on the NRC's sponsorship of this follow-up to the 1990 NCI study.

Based on the radiological information from CGS, U.S. DOE, and WDOH, and the staff's evaluation, there is no significant impact from radioactive effluents to members of the public from the operation of CGS on the Hanford Site.

Comment: *The NRC's Generic EIS estimates that for each and every one of these [renewed licenses] for 20 years, there will be 12 fatal cancers and it then calls this "acceptable" and a "small" impact. I think the NRC needs to revise this and think about whether or not any cancer death is small or acceptable. And, just put it in your own children and say would you view it that way if it was your child. Because you can play the game with numbers but your children will pay the price for years to come.* (**101-42**) [Pollet, Gerry]

Comment: *This EIS and this process for creating a supplemental EIS based on a Generic EIS that is years old is ludicrous. It is simply ludicrous to say we relied on safety evaluations 15 years ago and we will update it for some other license applications but not this one. How ludicrous? Well that 12 fatal cancer figure, for example, doesn't take into account that the National Academy, the National Research Council has issued the biological effects of radiation, report seven, which is the National Consensus Document that greatly increases the estimated health effects and fatal cancers especially for children and women from the same dose of radiation. So how many fatal deaths would occur if we used updated information? We don't know. Maybe it will be updated. Doubt it.* (**101-43**) [Pollet, Gerry]

Response to comment 101-42 and 101-43: The comments are on NRC's Generic Environmental Impact Statement for License Renewal of Nuclear Plants (NUREG-1437). This Generic Environmental Impact Statement (GEIS) examines the possible environmental impacts that could occur as a result of renewing licenses for individual nuclear power plants under 10 CFR 54. The GEIS, to the extent possible, establishes the bounds and significance of these impacts.

The calculated value of 12 additional deaths from fatal cancer over the 20 years of additional operation of a nuclear power plant is the result of several conservative assumptions. This value is, in fact, a calculated upper bound value based on cancer risk factors for radiation exposure. It does not mean that 12 people will die from cancer as a direct result of an additional 20 years of continued routine operation of any nuclear power plant. These calculations use the concept of collective dose. Collective dose estimates effects across a very large population, assuming that a small amount of radiation dose spread out among a large population would yield similar effects to a larger amount of radiation dose to a much smaller population. This is a very conservative assumption.

The cancer risk factors used in this calculation are also quite conservative. They are taken from the BEIR-V report, Health Effects of Exposure to Low Levels of Ionizing Radiation. In this report, it is estimated that "if 100,000 persons of all ages received a whole body dose of 0.1 Gy (10 rad) [roughly equivalent to 10 rem] of gamma radiation in a single brief exposure, about 800 extra cancer deaths would be expected to occur during their remaining lifetimes in addition to the nearly 20,000 cancer deaths that would occur in the absence of radiation. Because the extra cancer deaths would be indistinguishable from those that occurred naturally, even to obtain a measure of how many extra deaths occurred is a difficult statistical estimation problem." The radiation dose contribution to the population from current nuclear power plants is estimated to be 4.8 person-rem per year, whereas the dose contribution to the population from the complete uranium fuel cycle is 136 person-rem per year. The dose to an individual is only a very small fraction of these population doses. The nuclear fuel-cycle contribution to an individual's average radiation dose is less than 0.001 rem per year, as shown by the NCRP Report 93, Public Radiation Exposure from Nuclear Power Generation in the United States, as abstracted by the University of Michigan (http://www.umich.edu/~radinfo/).

In 2006, the National Research Council's Advisory Committee on the Biological Effects of Ionizing Radiation (BEIR) published BEIR-VII, entitled Health Risks from Exposure to Low Levels of Ionizing Radiation (BEIR 2006). The NRC completed a review of the BEIR VII report and documented its findings in the Commission paper SECY-05-0202, "Staff Review of the National Academies Study of the Health Risks from Exposure to Low Levels of Ionizing Radiation (BEIR VII)," dated October 29, 2005 (NRC 2005b) (ADAMS accession number ML052640532 http://pbadupws.nrc.gov/docs/ML0526/ML052640532.pdf). As reported to the Commission in SECY-05-0202, the staff stated "…that the findings presented in the National Academies BEIR VII report contribute to our understanding of the health risks from exposure to ionizing radiation. The major conclusion is that current scientific evidence is consistent with the hypothesis that there is a linear, no-threshold dose response relationship between exposure to ionizing radiation and the development of cancer in humans. This conclusion is consistent with the system of radiological protection that the NRC uses to develop its regulations. Therefore, the NRC's regulations continue to be adequately protective of public health and safety and the environment. Consequently, none of the findings in the BEIR VII report warrant initiating any immediate change to NRC regulations or Federal Guidance."

Further, in 2007, the NRC denied a petition for rulemaking (PRM-51-11; see ADAMS Accession No. ML061770056 http://pbadupws.nrc.gov/docs/ML0617/ML06170056.pdf) which asked the NRC to reconcile the 1996 GEIS with the radiological findings in the BEIR VII report. In denying the petition, the Commission, in its staff requirements memorandum, SRM-SECY-07-0155, (http://www.nrc.gov/reading-rm/doc-collections/commission/srm/2007/2007-0155srm.pdf) stated, "The Commission has approved the staff's recommendation to deny the subject petition for rulemaking, PRM-51-11. The Commission agrees that the NRC's existing regulations continue to be protective of public health and safety and the environment and that none of the

findings in the BEIR VII report warrant initiating any immediate change to NRC regulations or guidance."

Based on the above, the NRC asserts that its radiation protection standards are adequately protective of public health and safety and the environment. Accordingly, no changes will be made to the SEIS for CGS.

A.3.10 Hydrology

Comment: *Page 2-21, Lines 36-40. Paragraph states that a component of the environmental monitoring program's water quality monitoring program was discontinued in 1995 after "years of data showed no discernable changes in river water quality…" Since no information is given for when that part of the program began, there is no way for the public or the decisionmaker to quantify the study.* (**032-01)** [McDonald, Scott]

Comment: *Page 2-21, Lines 36-40. Paragraph states that a component of the environmental monitoring program's water quality monitoring program was discontinued in 1995 after "years of data showed no discernable changes in river water quality." Since no information is given for when that part of the program began, there is no way for the public or the decisionmaker to quantify the study.* (**072-02)** [Albin, Lynn]

Response to comments 032-01 and 072-02: The 1987 Annual Report for the Operational Ecological Monitoring Program (ADAMS Accession No. ML102380289) indicates that the operational monitoring program (including water quality monitoring) was initiated in March 1983, which was near the beginning of plant operations. The ER states, "As part of its operational monitoring programs, for several years Energy Northwest collected river water samples at four or more stations near the plant discharge at RM [river mile] 352." The ER also cites the 1995 Annual Report for the Operational Ecological Monitoring Program (ADAMS Accession No. ML102380294) in describing the samples collected during this program. This report indicates that water quality monitoring was still being performed in 1995. This implies that the operational monitoring programs (including water quality monitoring) initiated at the start of plant operations. Inclusion of additional information on this subject would not provide any significant information or alter the level of significance for any of the potential impacts. No changes were made to the SEIS because of these comments.

Comment: *Page 2-26, Lines 6-11. Paragraph states that there is a limited number of groundwater-supply wells that provide drinking water. The paragraph lists three wells at FFTF, one well at the Hanford Patrol Training Center, and one at the Yakima Barricade. However, [the Laser Interferometer Gravitational-wave Observatory] takes drinking water from a well. This should be listed also.* (**032-02)** [McDonald, Scott]

Comment: *Page 2-26, Lines 6-11. Paragraph states that there is a limited number of groundwater-supply wells that provide drinking water. The paragraph lists three wells at FFTF, one well at the Hanford Patrol Training Center, and one at the Yakima Barricade. However, [the Laser Interferometer Gravitational-wave Observatory] takes drinking water from a well. This should be listed also.* (**072-03)** [Albin, Lynn]

Response to comments 032-02 and 072-03: The Laser Interferometer Gravitational-wave Observatory Hanford Observatory uses well 699-S2-34B (B8101) as a water supply well for domestic water, fire water, and landscape irrigation. This well draws water from a deep confined aquifer that is high in fluoride and, thus, is treated using reverse osmosis. The Laser Interferometer Gravitational-wave Observatory also used well 699-S2-34A (B8100), completed

in the unconfined aquifer, as a water supply well for dust suppression during construction (circa 1994–1997). These wells are located approximately 10 km west-southwest of CGS with the current water supply well tapping a deep basalt aquifer that is hydrologically isolated from the unconfined aquifer beneath the site. Incorporation of this information into the SEIS would not provide any significant information or alter the level of significance for any of the potential impacts. No changes were made to the SEIS because of these comments.

Comment: *Page 4-41, Lines 14, 15. The sentence about a 2008 tritium concentration of 17,400 pCi/L in groundwater seems misplaced. The discussion in Lines 5-27 is focused on the localized contaminant plume emanating from Burial Ground 618-11. The subject groundwater sample is reflective of the more extensive contaminant plume from the 200 Area discussed on Lines 1-3 on this page. Also, the reference to EN 2010a should be to EN 2010b.* (**068-32**) [Javorik, Alex]

Response to comment 068-32: The discussion is on the quality of the groundwater in the vicinity of CGS, specifically regarding the tritium concentrations irrespective of where they came from. Reference DOE 2010a suggests that the tritium plume from the 618-11 burial ground is migrating towards CGS and is causing an increase in the tritium concentrations over and above that emanating from the 200 East Area. Reference EN 2009a, page 5–10, specifically states, "Tritium results ranged from less than lower limit of detection to 17,400 pCi/liter (See Appendix A, Table B-11.1)." Reference EN 2010b, page 6, corroborates this by stating, "Tritium concentrations in these samples ranged from less than lower limit of detection to 17,000 pCi/liter (See Appendix A, Table B- 11.1)." For all intents and purposes, these values are the same. Changing the discussion or reference would not provide any new substantial information nor would it alter the level of significance for any of the potential impacts. No changes were made to the SEIS because of this comment.

Comment: *General Comment. Section 4.3.3 states that there is infiltration of circulating cooling water into the groundwater through the drywells around the cooling towers. It does not appear that there was analysis of the effects to the movement of the plume beneath CGS toward the Columbia River or other facilities.* (**072-11**) [Albin, Lynn]

Response to comment 072-11: Section 2.1.7.1 recognizes that CGS has numerous drywells for the collection of stormwater and that some of these are located around the cooling towers. This section further recognizes that these drywells can provide a source of water to recharge the groundwater. Section 4.11.1.1 also recognizes that these stormwater discharges can effectively cause some dilution of the groundwater tritium concentrations. However, the quantity of stormwater discharges impacting the groundwater is so small or so short-term (except for episodic events) compared to the groundwater flow system that they are unlikely to significantly affect the movement of contaminant plumes beneath CGS toward the Columbia River or other facilities. Even if there was some notable local effects on the movement of the plumes, the impacts to water quality or water use would be negligible and would not alter the level of significance for any of the potential impacts. No changes were made to the SEIS because of this comment.

Comment: *Section 8.1.3. This section states that impact to surface-water quality would be small. Although this might be true, more consideration should be taken of the additional impermeable surfaces of the 135 acres for the new facility. This comment also holds true for Section 8.2.3 and the additional 500 acres of impermeable surfaces.* (**072-12**) [Albin, Lynn]

Response to comment 072-12: Although, based on the GEIS estimates, approximately 132 ac of land would be needed to support a natural gas alternative, only a portion of this would

be covered by impermeable surfaces (e.g., asphalt, concrete, roofs). In addition, some of this would also consist of existing onsite industrial areas already covered by impermeable surfaces such as existing roads, cooling towers, etc. CGS currently comprises 1,089 ac. Thus, the incremental increase in impermeable surfaces (assuming no reduction to the existing impermeable surfaces, such as through decommissioning), would be relatively minor if anything. The site receives only about 7 in. of precipitation per year, and what little stormwater runoff is produced is diverted to drywells for infiltration into the subsurface soils and is unlikely to affect surface water or groundwater. Similarly, the 500 ac estimated for construction of a new nuclear alternative is also likely to have insignificant impacts to surface water or groundwater from runoff associated with impermeable surfaces. Incorporation of this information into the SEIS would not provide any significant information or alter the level of significance for any of the potential impacts. No changes were made to the SEIS because of this comment.

A.3.11 License Renewal and its Process

Comment: *There is no reasonable justification to relicense this defunct nuclear reactor. It should be made required and cannot possibly meet today's new found standards of operation so allowing this reactor to be restarted and at some later date, is an irresponsible action. This reactor should be forced to go through all necassary relicensing as a new reactor would and meet all present standards without exception as well.* (**003-01)** [Apple, Robert]

Response to comment 003-01: The principal safety concerns associated with license renewal are related to the aging of structures, systems, and components important to the continued safe operation of the facility. When the plants were designed, certain assumptions were made about the length of time each plant would be operated. During the safety review for license renewal, the NRC must determine whether aging effects will be adequately managed so that the original design assumptions will continue to be valid throughout the period of extended operation, or verify that any aging effects will be adequately managed. For all aspects of operation, there are existing regulatory requirements governing a plant that offer reasonable assurance of adequate protection if its license were renewed.

The NRC's environmental review is confined to environmental matters relevant to the extended period of operation. Safety matters related to aging are outside the scope of this environmental review. An NRC safety review for the license renewal period is conducted separately The SER is available on the NRC public website at http://www.nrc.gov/reactors/operating/licensing/renewal/applications/columbia.html. The SER for Columbia was issued in February 2012. The comments provide no new and significant information; therefore, no changes were made to the SEIS in response to these comments. The comments provide no new and significant information; therefore, no changes were made to the SEIS in response to these comments.

Comment: *This 1,157 MW of base load power is critical to the BPA system, and must be continued.* (**012-02)** [Petersen, Gary]

Comment: *Finally, this is not a technical reason for running the plant or not running the plant, but it keeps coming up in the pro side of the argument that this is a firm load plant, baseload plant. By gosh, you need it for that reason. The problem with that argument is that this plant was shut down in May, and just recently was started up again. Nuclear power plants are baseload when they're running, but when they're not running, they're a very large chunk of power that you have to replace. So, there are pluses and minuses in terms of baseload versus nuclear power plant. And it's not all plus, if you have to put all your eggs in one generating*

basket, so to speak, because when they periodically have to shut it down for refueling or if there's a problem or if there were an accident that released any radiation whatsoever, that possibly shut the plant down for a long period of time, you have to replace all of that power. So, large generating stations inherently have that particular problem associated with them, and nuclear power plants as well. (**100-38**) [Johnson, Charles]

Response to comments 012-02 and 100-38: The need for power is considered to be outside the scope of license renewal (10 CFR 51.95 (c)(2)). The purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy-planning decisionmakers, such as state, utility, and, where authorized, Federal agencies (other than NRC). The comments are outside the scope of the license renewal review; therefore, they will not be evaluated further.

Comment: *I support Heart of Americal NW and am personally asking for regional hearings on the draft EIS for relicensing.* (**013-01)** [May, Tom]

Comment: *My name is Chandra Radiance and I was on the 2pm NRC call. Due to your technical problems, we lost the call and wasted alot of time waiting for the call to come back together. That is not as efficient of a way to have testimony as coming to our region like you have in the past. We NEED local in-person representation here in Hood River, [Oregon] as it is such an important issue facing the public health and safety of our Columbia River gorge! Instead we just stopped our life to be on this conference call and got to listen to 'Elevator Music' for almost an hour!* (**019-01)** [Radiance, Chandra]

Comment: *I tried to make my comment on the phone line today, but did not get to be heard.* (**019-03)** [Radiance, Chandra]

Comment: *I stayed on the line and listened in to each of the callers patiently waiting my turn, but apparently was never taken off of "listen only" mode so was unable to offer testimony. I wonder how many other callers had the same problem? Was there something I was supposed to do to indicate I wanted to be called upon? If so, it would have been helpful to have the directions repeated at intervals for callers signing in after 2pm.* (**020-01)** [DiPeso, Wendy]

Comment: *Further, phone conferences in the middle of a work day is insufficient to public participation. Stake holders have a right to full disclosure of the debate going on, the risks involved with an opportunity to testify.* (**020-06)** [DiPeso, Wendy]

Comment: *Unfortunately, your facilitator assumed that since I had asked a question, I had already commented, so I was eliminated from the list of telephone commenters. After that, the phone Line was open so I could hear you, but you could not hear people on the phone Lines. And, it was downhill all the way. This is a poor way to run a public meeting. If you cannot even manage technology to get a phone connection, then the NRC will have to just spend the time and money to have public meetings in several locations in the Columbia Generating Station's area, including downstream locations, Portland, [Oregon], and Vancouver, [Washington]. I waited through 2.5 hours of bad connections with echoing feedback, to finally be cut out arbitrarily and then technologically. It appears that the NRC does not really want to have to deal with our comments or input into this process. Is that correct?* (**022-01)** [Tsongas, Theodora]

Comment: *Unfortunately, the call in line is having difficulties, so I am writing comments as I sit here on hold. Given the unreliability of the phone in technology, perhaps it would be better to do*

local meetings as have been held before in Hood River. Even at the last Hood River meeting there was inadequate time to hear all comments and adequately address all questions. The public input appears to be getting marginalized. I assume the powers that be may not want to hear objections to their plans and the corporate sponsors profiting from Hanford and nuclear power would rather just get on with their plans and maximize shareholder dividends rather than waste time talking to individuals. (**023-01)** [Heartsun, Hafiz]

Comment: *Need convenient frequent public meetings to receive public input in Walla Walla, Seattle, Spokane, [and Energy Northwest] locations etc. re: progress on cleanup and prevention of additional waste, emissions, leaks, earthquakes, explosions, fires, etc.* (**039-06)** [Jensen, Rhoda D.]

Comment: *And, let me start by saying the relicensing and proposed extension of the operation of the sole commercial reactor in the northwest until 2043 is a major issue of great regional significance and interest. No one can deny that. And, therefore, it is sad that the NRC and the applicant, Energy Northwest, have refused to hold hearings around the region, especially around the State of Washington where the owners of the plant reside, and the people who use the electricity. And we urge you to revisit this question as we've requested, and to hold hearings on the question of extending this reactor's operation to 2043 in Seattle, in Snohomish, Clark, and the other major utility areas that own this reactor.* (**100-25**) [Pollet, Gerry]

Comment: *And, I want to thank the NRC for making available the phone line. With just five days of notice, I believe 36 people have signed up to be on the phone with just five days of notice. It shows the need for having meetings around the region for the public to be able to address you face-to-face.* (**100-30**) [Pollet, Gerry]

Comment: *So, I appreciate the time and the fact that you made it easy for those of us who were able to take time in the afternoon and make a phone call and listen to some testimony over a sticky phone line to testify today, I really do believe that you should be holding hearings throughout the region, particularly in the hometowns of the utilities that own the Columbia Generating Station so that the people who the public utilities -- are the owners of those plants have an opportunity to be able to testify. And I hope that you'll reconsider that decision as you were urged to do by Heart of America Northwest.* (**100-39**) [Johnson, Charles]

Comment: *Before rubber stamping the renewal, I strongly urge the NRC to hold public hearings (Telephonic interference) Fukushima type event at the Hanford plant.* (**100-49**) [Berlly, Bella]

Comment: *I've been to a meeting at Hood River about Hanford, and I'm disappointed that it's not being held there, and we have to go through this conference call. And, I got dropped from the line; I was not able to hear the presentation at the beginning.* (**100-57**) [Heartsun, Hafiz]

Comment: *And I echo everyone who has said that you should be holding these hearings in other places in the region, especially where the public utilities are holding partial ownership of the reactor.* (**100-69**) [Axell, Karen]

Comment: *And, I believe also that when we're dealing with situations as dangerous as we have, that the public should be made aware of what is going on, and there should be more public meetings and information for people to comment and make their voices well known on this issue. And, that's all I have to say on behalf of the Alliance for Democracy.* (**100-72**) [Brennan, Colm]

Comment: *Thank you for having the phone lines available, demonstrates that with 30 people on the phones that we should have had regional hearings and we should still have hearings around the region, including in Snohomish County where Snohomish PUD is a member and your rate payers, including many of my members are concerned about the relicensing and these issues in Seattle or in Vancouver in the Vancouver PUD area.* (**101-39**) [Pollet, Gerry]

Comment: *What is the possibility of just scheduling, I mean, you don't have to be here in Richland to reschedule a phone call before the end of the comment period. I'm just asking about the possibility of rescheduling on behalf of the people who are on the phones and it is going to be really frustrating. Since you don't have to be in Richland to do this call-in, and it might actually work better if you are at the NRC office. If we can't get the phone restored, I would appreciate that.* (**101-49**) [Pollet, Gerry]

Comment: *And also give, you know, thanks to the NRC, I realize it is a challenge dealing with technical problems, but I heard this afternoon's meeting -- But I think it highlights that we need public state to state meetings around the Nation so that its people can really participate properly.* (**101-53**) [Carlson, Kevin]

Comment: *You know, for the last 45 minutes I have been disconnected from this hearing. I have listened to technicians trying to fix the problem, interspersed with bursts of static and screeches of electronic feedback. And, I don't know what the problem is but I do know this is not a way to take public input or promote public involvement.* (**101-59**) [Marbet, Lloyd]

Comment: *And, I would ask that the NRC hold more public hearings in other locations in both the State of Washington and Oregon and specifically in Portland, Oregon. I know there are more people, many of which I have heard are disconnected from this call that are concerned about this issue and would like to participate. And, there is not an opportunity for them to effectively participate because they are now no longer a part of the process.* (**101-60**) [Marbet, Lloyd]

Comment: *And, my final comment again is would you please hold public hearings in communities down river from the Columbia Generating Station. We are impacted by the operation of this plant. We have a right to effectively participate, not have to go through what I just went through.* (**101-68**) [Marbet, Lloyd]

Comment: *I appreciate the opportunity to speak but I also agree with the previous caller who said that there should be regional meetings where people can show up in person to testify.* (**101-69**) [Chudy, Cathryn]

Comment: *More public hearings are extremely important.* (**101-81**) [Panfilio, Madya]

Response to comments 013-01, 019-01, 019-03, 020-01, 020-06, 022-01, 023-01, 039-06, 100-25, 100-30, 100-39, 100-49, 100-57, 100-69, 100-72, 101-39, 101-49, 101-53, 101-59, 101-60, 101-68, 101-69, and 101-81: These comments express dissatisfaction with the public meetings held by the NRC to solicit comments on the draft SEIS. Prior to the meetings, Energy Northwest sent the NRC a letter requesting that the NRC consider hosting a public meeting in the Seattle area (EN, 2011). The NRC carefully considered this request and responded with a letter explaining its decision to host two public meetings in the Tri-Cities area, near the plant, and not host additional meetings (NRC, 2011d). As a result of the request, the NRC added a telephone conference capability to the meetings in Richland, which allowed approximately 45 people to participate in the meetings via telephone. Unfortunately, there were some technical issues with the telephone equipment, which interfered with the ability of some callers

to provide their comments. The audio-visual contractor was eventually able to restore the telephone interface and the NRC staff at the meeting apologized for the inconvenience to the callers. As explained at the meeting and in *Federal Register* notice 76 FR 54502, there were other methods for submitting comments other than in person at the meetings, including mail, online, or fax. All comments are treated the same whether they are received verbally at the public meetings or in writing. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *I am a concerned resident of Thurston County. I believe I, as a resident, should have full knowledge of what is being considered that will affect my welfare as well as that of my fellow countians and state--and NATION! I BELIEVE I AS A RESIDENT SHOULD BE ENTITLED TO THIS!!* (**014-01)** [Downing, Edith]

Response to comment 014-01: The NRC strives to conduct license renewal reviews in an open manner. As part of the process to solicit public comments on the draft SEIS, the NRC:

- placed a copy of the draft SEIS at the Richland Public Library in Richland, Washington, and at the Mid-Columbia Libraries--Kennewick Branch in Kennewick, Washington
- made the draft SEIS available in the NRC's Public Document Room in Rockville, Maryland
- placed a copy of the draft SEIS on the NRC Web site at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement47/
- provided a copy of the draft SEIS to any member of the public that requested one
- sent copies of the draft SEIS to certain Federal, state, and local agencies
- published a notice of availability of the draft SEIS in the *Federal Register* on September 1, 2011 (76 FR 54502)
- filed the draft SEIS with the EPA
- announced and held two public meetings at the Red Lion Hotel in Richland, Washington, on September 27, 2011, to describe the preliminary results of the environmental review, answer any related questions, and take public comments

The comment did not provide new information relevant to the SEIS and will not be evaluated further. No change was made to the SEIS as a result of this comment.

Comment: *[I insist that] Oregon's governance insist on enforcing that our health and safety considerations are addressed since we live just on the other side of the river, an arbitrary boundary when it comes to escaped radioactive particles.* (**019-13**) [Radiance, Chandra]

Response to comment 019-13: The commenter's request regarding the Oregon Government is noted. The comment did not provide new information relevant to the SEIS and will not be evaluated further. No change was made to the SEIS as a result of this comment.

Comment: *Also, 60 years seems to be 'pushing' the safety capability quite a bit - I had heard, years ago, that nuclear plants were built for about a 25-year life.* (**031-02)** [Unknown, Unknown]

Comment: *Will this length of time for the life span of design built for the Columbia River Generation Station or similar stations of that genre facility?* (**101-20**) [Bertish, Dvija M.]

Response to comments 031-02 and 101-20: The original licenses for commercial nuclear power facilities were granted for a 40-year period, which was set by the Atomic Energy Act of 1954 and the NRC's regulations. It was imposed for economic and antitrust reasons rather than technical limitations of the nuclear facility. Studies and experience to date have shown that commercial nuclear power facilities can be safely operated for more than 40 years. As a result, the NRC has provided an option in Title 10 of the *Code of Federal Regulations,* which allows owners of nuclear power reactors to seek license renewal for up to an additional 20 years with no limitations on the number of times the license may be renewed. The decision whether to seek license renewal rests entirely with nuclear power reactor owners and, typically, is based on the plant's economic viability and whether it can continue to meet NRC safety and environmental requirements. The NRC bases its decision on whether or not to renew a license on whether the facility will continue to meet the requirements for safe operation and whether the protection of the environment can be assured. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *I am alarmed and disappointed with the NRC's current program of relicensing old reactors. It is my understanding that there is not even adequate inspection of the state of these aging reactors, let alone an adequate maintenance program once the reactors have be relicensed. Really? No plan for how to manage an aging reactor? No Safety Program? What a recipe for disaster! In the case of Hanford, large scale leaks are already occurring with little to no mitigation. Truthfully, it is time to consider decommissioning these reactors, not extending their already dangerous existence.* (**038-01)** [Unknown, Linda]

Response to comment 038-01: NRC's review of an application for license renewal has four components: a safety review, an environmental review, inspections, and an independent review by the Advisory Committee on Reactor Safeguards (ACRS). The NRC staff performs a safety review of the information provided in the application (as supplemented with additional information provided by the applicant at the NRC's request to ensure that aging of structures, systems, and components are adequately managed). The results of the staff's safety review are documented in a publicly available safety evaluation report. The NRC staff's environmental review results in the publication of a publicly available site-specific draft SEIS on license renewal. The public is invited to comment on the draft SEIS. Then, after considering all public comments, the NRC staff issues the final SEIS (this document). Teams of inspectors with experience in nuclear plant safety visit the site and verify that the applicant has implemented its aging management plans as committed to in the application. The results of plant inspections conducted as part of the license renewal are documented in inspection reports and are made publicly available. The ACRS is an independent panel of experts that advises the Commission on matters related to nuclear safety. The ACRS reviews the applicant's license renewal application, the staff's safety evaluation report, and the results of the onsite inspections and makes its recommendation to the Commission regarding issuance of the renewed license.

Comment: *EIS needs to disclose impact of explosion, fire, major earthquake, released radiation, inability to use reactor, leaks, spent waste, etc. All risks must be disclosed in the EIS prior to application for relicense.* (**039-02)** [Jensen, Rhoda D.]

Response to comment 039-02: The SEIS evaluates the issues within the scope of license renewal as defined by the applicable regulations: 10 CFR Part 51. The events listed, also known as postulated accidents, are Category 2 issues and are presented in Chapter 5 of this SEIS. This comment did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *The relicensing of the Hanford nuclear reactor until 2043, is poorly reasoned and researched. Your environmental impact statement is a whitewash. It doesn't take into account that Hanford sits on an active fault, that it already leaks into an area draining into the Columbia River basin, that you've no plan for cleaning up those degraded and leaking tanks, much less a better plan for storing the additional waste you intend to transport here over our roads. The citizens of Oregon and Washington are opposed to this; it is a strong-arm job of doing whatever you want with no democratic involvement whatever.* (**049-01)** [Nash, Susan]

Comment: *The generic EIS is 15 years old. It is not acceptable to use it in light of current science. An appropriate EIS needs to look more specifically at each local situation. The potential for adverse health impacts at Hanford have not been adequately evaluated. Furthermore, in terms of inadequate transparency, this draft generic EIS is characterized by oververbose reiterations of boiler-plate definitions but does not provide necessary detail on data and analyses used as the basis for conclusions drawn. The conclusions drawn on the safety of the Columbia Generating Station appear to be arbitrary and not supported by the evidence provided in the draft generic environmental impact statement.* (**062-11**) [Tsongas, Theodora]

Response to comments 049-01 and 062-11: The comments are general statements that the NRC staff has not provided a thorough and accurate analysis of all relevant potential impacts.

The Generic Environmental Impact statement for license renewal (GEIS) evaluated 92 environmental issues and, of these, 69 were found to be generic (Category 1) while 23 issues were found to require a site-specific review and analysis. Twenty-one of the site-specific issues are considered to be Category 2 issues. The remaining two issues, environmental justice and chronic effects of electromagnetic fields, were not categorized and are addressed by site-specific analysis.

Category 1 issues are termed "generic" issues because the conclusions related to their environmental impacts were found to be common to all plants. For Category 1 issues, a single level of significance was common to all plants, mitigation was considered, and the NRC determined that it was not likely to be beneficial. Issues that were resolved generically are not reevaluated in the site-specific supplement to the generic environmental impact statement on license renewal (SEIS) because the conclusions reached would be the same as in the GEIS, unless new and significant information was identified that would lead the NRC staff to reevaluate the GEIS's conclusions.

Site-specific issues (Category 2 issues) were analyzed by the applicant as part of its environmental report. The NRC staff evaluated site-specific data provided by the applicant, other Federal agencies, state agencies, Tribal and local governments, as well as information from the open literature and members of the public. From this information, the staff made a site-specific assessment of the particular issues. Its analyses and conclusions are included in this SEIS.

Comment: *Heart of America Northwest and Heart of America Northwest Research Center hereby formally request the Commission (NRC) to extend the comment period on the Columbia Generating Station environmental impact statement for a period of 30 days after the NRC releases its pending inspection report(s) on events, which include a hydrogen explosion or burn and major safety condition violations; [Energy Northwest] releases public records requested that are vital for the public to review safety and cost issues associated with relicensing, in the event that [Energy Northwest] moves forward with its pending proposal to utilize Plutonium or MOX fuel in the reactor; and, for 30 days to allow the public to review the inspection and event notification reports issued on November 14 and 15, 2011; including the inspection report*

regarding a hydrogen explosion at the reactor reported by subcontractor B&W [Babcock and Wilcox] in April. Over 40 of our members attended by phone or in person the hearing on the EIS held in Richland Washington, and many more of our members may comment based on review of the records which are central to numerous site and reactor specific conditions and plans after review by our organization and our members. However, records essential to review of issues raised in the Draft EIS have not been released under a request to ENW pursuant to Washington's Public Records Act, RCW Chapter 42.56. ENW has responded that these records are expected to be provided by December 21, 2011. If ENW requires until December 21, 2011, to release public records that are related to pending formal proposals which are discussed in the EIS, then the NRC must extend the comment period until the records have been released and available for public review for a period of 30 days. NEPA requires that all records and documents relied on by an applicant or agency for a draft EIS to be available. The agency, NRC, in this case has identified in the Draft EIS that the applicant and another Federal agency (U.S. Department of Energy) have a formal pending proposal that is related to the pending relicensing and which may have significant potential impacts (cumulative or on its own). The scope of that pending proposal, for which funds are being expended and formal commitments and contracts have been entered into, is not disclosed and cannot be assessed as required by NEPA until the requested records have been released. ENW's Aging Maintenance Program, the status of safety systems at the reactor and whether conditions inside the reactor are as represented in the application are central issues for the Draft EIS and the public's ability to comment on the Draft EIS. The public's ability to comment on each of these major issues is adversely affected and compromised by: The lack of availability for the public to review findings and information regarding the "unusual event" reported to the Nuclear Regulatory Commission concerning a "hydrogen burn" that took place April 7, 2011; Documented allegations in the lawsuit filed on November 14, 2011 by Babcock and Wilcox, contractor for the extended refueling and maintenance outage which ended in September, 2011, that site conditions, and the time required to complete the project "were significantly different than represented by ENW." The site conditions which were different were radiological contamination in the reactor, which are also different than conditions reported in the draft EIS. The cause of the contamination and other differences in condition are vital issues for the public to comment on regarding ENWs aging maintenance programs and the safety status of the reactor and its suitability to operate until 2043. As reported in Clearing Up on November 14, 2011 - less than 48 hours before the close of the comment period: "On Sept. 26, the NRC said it was preparing a 'special inspection' to review three events during the outage in which operators inadvertently drained reactor coolant from the plant's reactor vessel." It said the report would be issued 'within 45 days,' meaning no later than Nov. 10, but the NRC now says it 'may be a few more weeks.' It was unclear whether the three events NRC is investigating include or are related to the April 7 'hydrogen puff' [EN] reported, and which appear to be the 'hydrogen explosion' B&W reported in its lawsuit. NRC spokeswoman Lara Uselding declined to say specifically if the agency was investigating the explosion or B&W's reports of radiological conditions at the work site. "We are doing the special inspection to gain more insights into the incidents involving the condenser and outage work," she told Clearing Up. On November 14, the NRC issued another current Event Notification regarding a major safety system loss of capability at the CGS Reactor: Event Number: 47429 LOSS OF TECHNICAL SUPPORT CENTER EMERGENCY FILTRATION SYSTEM DURING MAINTENANCE At 1439 PST on 11-10-2011, while performing maintenance on the Technical Support Center (TSC) emergency filtration system, it was discovered that replacement gaskets required to restore the system were undersized and that the system could not be restored. Specifically the replacement gaskets were determined to be too small. All spare gaskets onsite were examined and determined to suffer from the same undersized condition. Prior to discovery of the undersized gaskets, the maintenance plan allowed for prompt system restoration in the event of

an emergency. The current lack of a suitable replacement gasket has resulted in a condition which represents a major loss of emergency preparedness capability per 10 CFR 50.72(b)(3)(xiii) in that TSC habitability might not be sustainable during certain events due to the inability of the filtration system to maintain a habitable atmosphere. Station procedures provide instructions to relocate the TSC if monitoring during an emergency event indicates that habitability cannot be maintained. Compensatory measures are being developed (while the restoration work is ongoing) to heighten awareness of responsible TSC staff following ERO activation to monitor TSC habitability in accordance with procedures and to consider potential TSC relocation as necessary as described in the station emergency plan. It is vital that the public have access to, and time to review, the pending NRC inspection report and to review the results of inspections and reports regarding the event of November 10, 2011, for a minimum of 30 days prior to the closing of the comment period on the Draft EIS. These events and reports directly bear on the conclusions and conditions reported in the Draft EIS. Without the reports the public cannot effectively comment on whether conditions at the Reactor and its management capabilities for the Aging Maintenance Program are as represented. (**054-01)** [Pollet, Gerry]

Comment: *Late Notice: [Washington Physicians for Social Responsibility] requests a two month delay on the EIS deadline, due to the announcement on November 14, 2011: "Loss of Technical Support Center Emergency filtration System." We demand that at least two months are needed to see the sequence of events, timing and [EN]'s and NRC's response to these undersized filteration gaskets causing an inhability to the inside atmosphere at the reaction station. See also item #7 below in our comments, "B&W's $50M. suit against [EN] for the 'Excessive Condenser Replacement Delays' of October 21, 2011."* (**060-01)** [Buchanan, Thomas]

Comment: *Finally, we want to speak directly to Babcock and Wilcox's $50 Million suit against [EN] for "Damaged Condenser Delay" on October 21, 2011. Most importantly, a hydrogen explosion occurred due an improper draining of the pipes, leaving hydrogen to build up and explode creating "an unusual event" report to the NRC .The NRC commented at the time that: "We are doing a special inspection to gain more insights into the incidents involving the condensor and the outage (over 120 days) work." We demand the EIS process be delayed until this NRC inspection report is released and reviewed by the public.* (**060-09)** [Buchanan, Thomas]

Comment: *Secondly, we formally request that the NRC extend the comment period on this environmental impact statement until such time as both Energy Northwest -- the applicant -- and the Energy Department respond to Public Records Act requests and Freedom of Information Act requests that are essential to allow the public to comment fully on the proposals. There are significant issue areas, particularly the proposed use of plutonium fuel that Energy Northwest has refused to make documents public in regard to, and has informed us that they will not respond to that request in full until a month and a half after the close of the comment period. That's unacceptable. And, the NRC, as long as you are conducting a NEPA process and there is an issue in regard to a related proposal, the NRC should be cognizant of it and say we cannot close the comment period until the information is available from the applicant to the public.* (**100-26**) [Pollet, Gerry]

Comment: *And, in terms of plutonium fuel, Energy Northwest promised to release documents by September 21st regarding its study of plutonium fuel. The documents we have received to date show that Energy Northwest is formally considering and Pacific Northwest Lab has already been spending money and has issued work orders and contracts to consider use of plutonium*

fuel in this reactor to be fabricated in the 325 Building at Hanford, which is contaminated and creates additional environmental impacts. And, the program will start having fuel pins tested during the 2015 shutdown. That's the proposal. And no, the Energy Northwest Board, because we did ask to see the presentation you were given, you were not given the document, the technical document that said use of plutonium fuel could increase the offsite radiological dose in the event of an accident by 40 percent and that if the Fukushima Reactor 3 had a full load of MOX plutonium fuel, that is the percent increase the radiation dose on top of the already horrific effects. And the Energy Northwest Executive Committee and Board were not given those documents. But why are you hiding more? Now Energy Northwest says we are not going to give you the documents you have asked for until December 21st, after the close of this comment period. We have asked the NRC to extend the comment period on the EIS until Energy Northwest comes clean and discloses all the documents requested under Washington's Public Records Act and the Energy Department discloses its documents under FOIA in regard to the proposal to use plutonium fuel. The National Environmental Policy Act says very clearly and case law is entirely on our side, that all related proposals have to be disclosed and discussed in this EIS. (**101-45**) [Pollet, Gerry]

Response to comments 054-01, 060-01, 060-09, 100-26, 101-45: These comments requested that the NRC extend the comment period on the draft SEIS. The NRC believed that the comment period was adequate and decided not to extend it. The NRC responded to the request from Heart of America Northwest in a letter dated December 20, 2011. The letter is publicly available in ADAMS (ADAMS Accession No. ML11347A394). In this letter, the NRC explained why the reasons identified in the Heart of America Northwest request were outside the scope of the environmental review and did not justify extending the comment period. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *Given NRC's documented history of weakening regulations whenever problems occur, never enforcing them, your "re-licensing" amounts to a rubber stamp. To be credible as a legitimate regulatory agency, you must hold public safety as your guiding principle above profitability for the industry. Your path of continually weakening standards is a slippery slope that brings us ever closer to an American nuclear disaster to add to the list of Russia and Japan. It is not credible that plants designed to last 40 years that have had numerous problems will be viable for another 40 years. You must demonstrate some spine to be better than an industry lap dog. Your job is to tell them what to do, not the other way around. As a member of the public, I demand a REAL EIS with teeth that assures my safety from the persistent and insidious toxic affects of radioactivity. Don't set me up to get evacuated when Columbia melts down.* (**056-02)** [Heartsun, Hafiz]

Response to comment 056-02: The NRC takes seriously its responsibility under the Atomic Energy Act to protect the health and safety of the public and the environment in regulating the U.S. nuclear power industry. More information on NRC's roles and responsibilities is available on the NRC's website at http://www.nrc.gov/about-nrc/regulatory.html. The NRC was created by Congress and designed so that it would not report to the same part of the government that was in charge of setting energy policy. The comments did not provide new information relevant to this EIS and will not be evaluated further. No change was made to the SEIS as a result of this comment.

Comment: *There is no need to approve relicensing of this nuclear power plant twelve years before its license is due to expire.* (**058-02)** [Johnson, Charles]

Comment: *So, I think it's -- particularly when you consider that this plant is licensed through 2023. Where is the fire in relicensing this reactor? It is way premature to be rushing forward relicensing a reactor that still has another 12 years of active license. Particularly, when you consider that none of these reactors were designed initially to last longer than 40 years. They're all on borrowed time, so why would we want to be rushing forward? We want a large cadre of reactors way ahead of time, particularly in this case definitely 12 years ahead of time. Particularly with unanswered questions, such as the ones that Gerry raised dealing with plutonium fuel potentially that might be used at the site.* (**100-36**) [Johnson, Charles]

Comment: *The Columbia Generating Station has an operating license until December 20, 2023. Why is license renewal taking place now when there is 12 years left under the existing license? And why doesn't the NRC set a limit on when these applications can be filed? Because it seems to me the evaluation that takes place here becomes quite dated over a 12-year period before the renewal actually sets in.* (**101-30**) [Marbet, Lloyd]

Comment: *Now I asked questions during this process and one of them had to do with the operating license being renewed at this time 12 years out from the end of the operating license. Conducting a license renewal now misses the opportunity to thoroughly examine this nuclear plant's operation in light of the lessons being learned from the accident at Fukushima. Reviewing this license extension now ignores the advances in science and engineering over the next 12 years, which can improve the level of analysis, which takes place closer to when an operating license expires. And, also, it affects the analysis of availability of alternatives. As we have seen in recent times, the cost of wind energy has come down. The cost of photovoltaics has come down. All those have an impact on what might be available to replace the risks that we run in operating the Columbia Generating Station.* (**101-61**) [Marbet, Lloyd]

Response to comments 058-02, 100-36, 101-30, and 101-61: According to the regulations, a nuclear power plant applicant may apply to the NRC to renew a license as early as 20 years before expiration of the current license. The NRC staff has determined that 20 years of operating experience is sufficient to assess aging and environmental issues at the site. A major consideration for seeking license renewal so far in advance of the expiration date of the current license is the time it takes to approve and construct major new generating facilities. License renewal applicants are expected to apply at least 5 years before their license expires. Typically, it takes 22–30 months for the NRC to determine whether or not to grant the renewed license. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *Please make the information in notices understandable to the lay person and detailed.* (**059-01)** [Reifschneider, Jill]

Response to comment 059-01: Revision 2 to the NRC Editorial Style Guide, NUREG-1379, describes the Government-wide requirements for documents to be written in plain language. While discussing the complex operation and environmental impacts of a nuclear power plant, the staff makes every effort to follow this guide and to use plain language. However, the SEIS discussions often cover highly technical issues and concepts, and it may not always be practical to avoid using some scientific terms and language. The staff attempts to strike a balance between overly scientific and overly simplistic such that the result is a document that is sufficiently analytical but readable. No changes were made to the SEIS based on this comment.

Comment: *First thing I guess I want to say is that I have to recognize -- all of us who are participating in this hearing need to recognize that this process of NRC relicensing has been*

going on for several years at this point, and as I understand, that there has not been a single plant applying for relicensing that has not been relicensed. (**100-34**) [Johnson, Charles]

Comment: *My third question is historically what has been NRC's record on renewable license applications in this arena?* (**101-06)** [Cox, John]

Response to comments 100-34 and 101-06: The above comments express concern relating to the approval of all license renewal applications accepted by the NRC. To date, the NRC has approved all of the applications for license renewal for which the reviews have been completed and are not currently in the hearing process.

The NRC, as part of the review, will identify deficiencies with systems, structures, or components of the facility and issue a request, to the applicant, for additional information. If problems are identified during the review, the applicant is given the opprotunity to make the required modifications or put in place a mitigation plan that would be acceptable to the NRC. Identified problems with structures, systems, or components would be addressed immediately, and any necessary changes would be made under the current operating license rather than waiting for the period of extended operation. This process continues until the NRC concludes that the application is sufficient to complete the review.

The decision whether to seek license renewal rests entirely with nuclear power plant owners, and typically is based on the plant's economic situation and whether it can meet NRC requirements. The NRC has the authority to deny a renewed license application if the applicant does not provide appropriate or adequate information for the NRC to have reasonable assurance of continued safe plant operation for the extended plant life. The NRC will not grant a renewed license unless the applicant has demonstrated that it will adequately manage the effects of aging as required by the regulations.

Comment: *The first question is who did the GEIS and SEIS work?* (**101-04)** [Cox, John]

Response to comment 101-04: The list of preparers is in Chapter 10 of the GEIS and Chapter 10 of the SEIS.

Comment: *I have a question, I guess, for has there been any impact from an approved study or impact study to a nuclear site after it has been improved? Out of those 47, have you had any significant impact after approving a nuclear site's renewal? I just wondered if it was like a negative impact or impact more than what you expected from a relicensing.* (**101-07)** [Sargent, Rich]

Response to comment 101-07: The Generic Environmental Impact Statement for License Renewal of Nuclear Plants (NRC, 1996), (NRC, 1999) includes a systematic evaluation of the environmental consequences of renewing an operating license and operating a nuclear power facility for an additional 20 years. The NRC staff is currently undertaking an effort to update the Generic Environmental Impact Statement. The revision will incorporate experience and information available from license renewals since the current document was issued.

Comment: *My second point as a resident of this region following Fukushima, I asked a lot of questions about our backup systems for providing cooling water to this nuclear facility. And, I found those responses to be very robust. And, I would assume that that would be part of your analysis as well?* (**101-09)** [Larsen, Pam]

Response to comment 101-09: The NRC performs a safety review of the applicant's LRA to determine if the applicant has adequately demonstrated that the effects of aging will not have adverse impacts on the nuclear facility's operation. An applicant must identify all plant systems, structures, and components that are safety-related (including emergency cooling systems) or whose failure could affect safety-related functions as well as those that are relied on to demonstrate compliance with the NRC's regulations for fire protection, environmental qualification, pressurized thermal shock, anticipated transients without scram, and SBO. For more information about the NRC actions in response to the Fukushima events, please see the response to comment 011-01.

Comment: *On your impact analysis, on your levels, at what point do you require mitigation and how is that done? Do you work that out with the licensee? I notice all of them are small but…* (**101-10**) [McDonald, Scott]

Response to comment 101-10: The NRC considers mitigation for adverse environmental impacts related to license renewal as defined in 10 CFR Part 51.

Mitigation is often complex in both concept and practice. To comply with NEPA, NRC evaluates the effects of continued operations of a nuclear power plant over the 20-year license renewal period. NEPA is a procedural law and does not grant the NRC the authority to take action, but rather, directs Federal agencies to assess the impact of an action on the environment, consider alternatives to the proposed action, and propose mitigation of impacts.

The actual requirements for mitigation, including prevention and elimination of impacts, are determined among the licensee and Federal or State agencies with jurisdiction over the affected resource. For example, the NPDES permit issued by the EPA or delegated State agency would contain any compliance actions required to mitigate the impacts of impingement or entrainment. As a Federal agency, the NRC consults with other Federal agencies regarding the mitigation of impacts regulated by Federal laws. For example, the NRC is involved in consultations required by the Endangered Species Act among others.

If the NRC determines that environmental mitigation is necessary, the NRC will require changes to the current licensing basis. These changes may be in the form of a license condition or technical specification requirement. A license condition is a condition that must be met for the license to be valid. A technical specification is a specific requirement that is contained in the license with which a licensee must comply.

Comment: *The first is it was mentioned that the NRC was in the process of updating its Generic EIS and you said that this would affect other [renewed licenses] that were up for renewal. I was just wondering why that is.* (**101-26**) [Mann, Carolyn]

Response to comment 101-26: This review was conducted using the version of the GEIS, which was approved and in effect during the time of the review (NRC, 1996), (NRC, 1999).

Comment: *And I was also wondering if you could explain how it was that 20-year time period for a license renewal rather than having it possibly five, ten years?* (**101-27**) [Mann, Carolyn]

Response to comment 101-27: The Atomic Energy Act of 1954 (as amended) allows the NRC to issue licenses for commercial power reactors to operate for up to 40 years. The licensee may apply for renewal after having completed 20 years of operation. The license renewal term is limited to 20 years so that the renewed license (20 years beyond the expiration date of the

original license) does not exceed 40 years if the plant applies for renewal at its earliest opportunity.

Comment: *Relicensing of the Hanford reactor should be based on safety first, energy need second.* (**020-02)** [DiPeso, Wendy]

Comment: *All safety considerations and analysis of back-up systems should be an integral part of this review. According to National Environmental Policy Act, all potential significant impacts need to be presented in one document to the public.* (**062-08)** [Tsongas, Theodora]

Comment: *How can an environmental impact statement be considered complete without a thorough review of the safety of this facility. Why is the safety evaluation not part of this EIS?* (**062-12**) [Tsongas, Theodora]

Comment: *I just need a little bit of clarification about the environmental review not on its safety. I assumed that safety was included.* (**101-28**) [Tsongas, Theodora]

Comment: *And while we are on that point, let's just say no one else would ever claim that safety issues don't have to be disclosed in EIS. Human health impacts are part of the NEPA process. Telling people to go to the NRC's arcane Web site and try to find documents about the safety review defeats the entire purpose of the National Environmental Policy Act, which is that all potential significant impacts are to be disclosed in one document for the public to review and comment on. They belong in this document, not somewhere else on the web where you are not even invited to comment.* (**101-46**) [Pollet, Gerry]

Comment: *I also would like to note that I don't believe we can separate issues of safety from environmental impact issues. And, particularly in light of the Fukushima disaster, I think they entirely related and should be considered for the final decision.* (**101-70**) [Chudy, Cathryn]

Response to comments 020-02, 062-08, 062-12, 101-28, 101-46, and 101-70: The environmental review process focuses on environmental impacts rather than on issues related to the safety of an operation. Safety issues become important to the environmental review when they could result in environmental impacts, which is why the environmental effects of postulated accidents are considered in the SEIS. The NRC has codified the regulations for conducting an environmental impact statement separate from the regulations for reviewing safety issues during license renewal. The regulations governing the environmental review are in 10 CFR Part 51, and the regulations covering the safety review are in 10 CFR Part 54. For this reason, the license renewal process includes an environmental review that is distinct and separate from the safety review. Because the two reviews are separate, operational safety issues and safety issues related to aging are considered outside the scope for the environmental review, just as the environmental issues are not considered as part of the safety review. However, safety issues that are raised during the environmental review are forwarded to the appropriate NRC organization for consideration and appropriate action. Both the safety and environmental reviews must be completed before a license renewal decision is made.

Comment 101-70 expresses a concern, in part, for safety specifically because of the Fukushima event. Additional information and comment responses on Fukushima can be found in this Appendix under section A.3.8 Fukushima.

Comment: *Why is there no opportunity for public comments on reactor safeguards?* (**062-14**) [Tsongas, Theodora]

Comment: *I have a question in that Dan said one time that the NRC sees nothing that calls into question the preceding analysis that they don't see a risk to the environment or public health from the safety standards that are currently in effect. That is my first question for clarification. Is that where he was going with that comment?* (**101-14**) [Morris, Nancy]

Comment: *So where would we see those to comment on the safety?* (**101-29**) [Tsongas, Theodora]

Response to comments 062-14, 101-14, and 101-29: During the safety review process, the staff holds meetings with the applicant to discuss the review of the application. The public is invited to observe and has the opportunity to comment at the conclusion of the technical portion of the meeting. The results of the staff's safety review are available to the public. The regulations specify the process for the safety review. A Safety Evaluation Report with Open Items and a final Safety Evaluation Report are available electronically from ADAMS. This system is accessible at http://www.nrc.gov/reading-rm/adams.html. Members of the public may contact the Advisory Committee on Reactor Safeguards (ACRS) and request to make a statement during the ACRS meeting. In addition, any person who believes he or she would be adversely affected by a specific reactor license renewal may request a hearing. Members of the public may also petition the NRC, in accordance with the provisions of 10 CFR 2.206, for consideration of safety issues during current operation and the period of extended operation of the plant. These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *And quite frankly, given the way these type of reviews are going and the way the industry is observing itself in terms of always these low-level dangers. I think not that the licensee system should be completely reviewed and have different and higher standards instigated. That would certainly allow them to compare Fukushima and what happened there.* (**101-86**) [Morris, Nancy]

Response to comment 101-64 and 101-86: The commenter is suggesting that the NRC's existing license renewal regulations be completely reviewed and revised with higher standards. The Commission has established a process by rule for the environmental and safety reviews to be conducted to review a license renewal application. The development of the Commission's regulations governing the license renewal process was subject to public review and comment. Following the accident at Fukushima, the NRC conducted a near-term review and concluded that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. The NRC task force recommended rulemaking activities, orders, certain staff actions, and actions for long-term evaluation. A long-term evaluation is planned and will assess whether any additional licensing actions are necessary. The comments will not be evaluated further.

Comment 101-86 expresses a concern, in part, for safety specifically because of the Fukushima event. Additional information and comment responses on Fukushima can be found in this Appendix under section A.3.8 Fukushima.

A.3.12 Opposition to Nuclear

Comment: *As a resident of Portland, [Oregon], who stands to be effected if an accident occurs at Columbia Generating Station, resulting from an earthquake, human error, etc. I would like for the plant's license to NOT be renewed and instead would like to see it safely shut-down.* (**007-01**) [Coscione, Nancy]

Comment: *I am opposed to the relicensing of the Columbia Generating Station reactor.* (**009-01)** [Ray, Gisela]

Comment: *I will do everything I can to unseat this Administration for its continued support for nuclear energy under the pretext that it's green and sustainable. Nuclear energy cannot be legitimately described as "sustainable" - at least as long as human life is included in your calculations of what can and should be sustained.* (**015-02)** [Bushman, Kathleen]

Comment: *In summary, I plead with you on behalf of the human species and the Universal ONENESS of all life which I humbly represent, PLEASE DENY COMMERCIAL NUCLEAR REACTOR AT HANFORD Facility. Do not allow RELICENSING TO OPERATE UNTIL 2043, or even to remain operative until 2023 for that matter!* (**019-19**) [Radiance, Chandra]

Comment: *No reliscencing of the Columbia Generating Station.* (**046-01)** [Hamachek, Louisa]

Comment: *I strongly object to the re-lisencing of columbia river generation station.* (**056-01)** [Heartsun, Hafiz]

Comment: *I do not support the renewal of the Columbia Generating Station's (CGS) license when it expires in 2023, for the following reasons.* (**062-01)** [Tsongas, Theodora]

Comment: *Secondly, saying that nuclear power is clean is pretty much like saying that coal is clean because it doesn't create nuclear waste. Here at Hanford, you happen to have a good example in the backyard where the CGS reactor sits.* (**101-40**) [Pollet, Gerry]

Comment: *To say that nuclear energy is clean is to say that drinking poison is healthy. Hearts must be open for the courage to do good for the earth in order for us to have good health, long lives, prosperity, and leave a legacy of well-being for future generations.* (**101-82**) [Panfilio, Madya]

Comment: *And I really feel insulted when we have a power analyst or any representative who would continually use the term of nuclear clean power waste in a world of scientist who completely disagree if this were a physicist forum.* (**101-88**) [Morris, Nancy]

Comment: *It is ridiculous that we sit around and look at this and in light of what we have seen in the last couple of months, we don't actually have some sort of balance on this and really start to look at it in terms of what it means for our future generations, even when my grandchildren. It is either our grandchildren or either our kids. We are irresponsible if we are not doing better than that and we should be.* (**101-89**) [Stierling, Rachel]

Response to comments 007-01, 009-01, 015-02, 019-19, 046-01, 056-01, 062-01, 101-40, 101-82, 101-88, and 101-89: The comments are noted. The comments oppose nuclear power in general as well as the license renewal of CGS, but they do not provide any new and significant information. Therefore, no changes have been made to the SEIS.

Comment: *Or the leaky pipes under a reactor now commonly being found should disqualify it at the least and of the number of faults of old reactors now being found.* (**003-02)** [Apple, Robert]

Response to comment 003-02: The comment is a general statement that leaks and other faults are common in older nuclear power plants and that the NRC should not renew the license for CGS. The current regulations and the safety review portion of the license renewal process

ensure that the applicant will be able to adequately manage the effects of aging throughout the period of extended operation. The comment did not provide any new and significant information. Therefore, no changes have been made to the SEIS.

Comment: *I also take issue with the claim that nuclear power is economical. This view does not take into account the decommissioning costs of obsolete plants, cleanup of catastrophic disasters, as well as the still unresolved waste disposal issue. It seems to me that the EIS should include these inevitable long term costs. Note Trojans economic debacle, certainly there were political harrasment factors, but the failed steam reactor alone would have been sufficient to shut it down. Trojan was a big win for PGE and a major loss for the ratepayers. Add up the whole mess and how much did we pay per kilowatt?* (**023-03)** [Heartsun, Hafiz]

Comment: *In 1951, safe, affordable nuclear power was expected to be achieved only a few years in the future. Today, after 60 years and tens of billions of dollars in government subsidies, the next generation of nuclear reactors promises to achieve this same goal in only a few decades. Meanwhile, the costs continue to increase, and spent fuel rads and other nuclear waste pile up in temporary storage facilities with no permanent disposal facility operational. At Hanford, some of these temporary storage tanks are over fifty years old and are leaking radioactive materials into the Columbia river. Also, little accidents keep happening, like Fukushima. And the taxpayers money, invested in subsidizing these facilities, disappears and does not return.* (**050-01)** [McCombs, Delbert]

Comment: *The EIS needs to have a cost-benefit analysis showing whether the renewable energy coming on board can replace the small amount of energy generated by Energy NW.* (**052-05)** [March, Leslie]

Comment: *I also take issue with the notion that nuclear power is economical. This view does not take into account decommissioning costs of all of these plants. The cleanup of catastrophic disasters which have happened and will happen in the future. Still unresolved waste disposal issue shows no sign of being resolved at all.* (**100-59**) [Heartsun, Hafiz]

Response to comments 023-03, 050-01, 052-05, and 100-59: The regulatory authority over licensee economics (including the need for power) falls within the jurisdiction of the states and to some extent within the jurisdiction of the Federal Energy Regulatory Commission. The proposed rule for license renewal had included a cost-benefit analysis and consideration of licensee economics as part of the NEPA review. However, during the comment period, state, Federal, and licensee representatives expressed concern about the use of economic costs and cost-benefit balancing in the proposed rule and the GEIS. They noted that the President's Council on Environmental Quality (CEQ) regulations interpret NEPA to require only an assessment of the cumulative effects of a proposed Federal action on the natural and man-made environment and that the determination of the need for generating capacity has always been the states' responsibility. For this reason, the purpose and need for the proposed action (i.e., license renewal) is defined in the GEIS as follows:

> The purpose and need for the proposed action (renewal of an operating license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such needs may be determined by State, licensee, and, where authorized, Federal (other than NRC) decision-makers.

Section 51.95(c)(2) of 10 CFR states that:

The supplemental environmental impact statement for license renewal is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation.

NRC does not have authority by law or regulation to ensure that the proposed plant is the least costly alternative to provide energy services under any particular set of assumptions concerning future circumstances. The NRC has considered (in Chapter 8) the potential for alternative non-nuclear technologies to provide the electricity that could be generated by the proposed plant and the environmental impacts of those alternatives. The NRC is not involved in establishing energy policy. Rather, it regulates the nuclear industry to protect the public health and safety and the environment within existing policy. Therefore, issues such as the potential effect of a particular nuclear power investment on the future development and implementation of alternative technologies, subsidies for nuclear power, and characterization of financial risks associated with such projects are not within the scope of the NRC environmental review.

The sufficiency of decommissioning funding is also outside the scope of environmental review; however, 10 CFR 50.75 requires licensees to provide reasonable assurance that funds will be available for the decommissioning process.

The NRC's regular analysis of plants' decommissioning funding plans includes a conservative growth estimate to account for inflation and market instability. The NRC's analysis disregards unsupported hopes for better market performance or expectations for reactor license renewals. The NRC is also prepared to require additional contributions to decommissioning funds or other acceptable financial mechanisms if its analysis indicates possible shortfalls. Decommissioning funds are separate from other plant assets and are protected by law for cleanup activities only – a plant operator cannot "walk away" from its responsibilities to return a site to an acceptable state.

SAFESTOR is a method of decommissioning in which a nuclear facility is placed and maintained in a condition that allows the facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use. Any plant that chooses the SAFSTOR option must continue to monitor and maintain the plant to meet safety regulations, as well as mount an effective defense against threats to any spent nuclear fuel on-site. The NRC inspects permanently shut-down plants to ensure they meet these requirements until the site is cleaned up. NRC regulations prohibit SAFSTOR plants from doing anything which would prevent release of the site for future use, cause any new significant environmental impacts, or that could lead to insufficient decommissioning funds. In order for the NRC to terminate a plant operator's obligations at a site, the cleanup must meet explicit standards for future use such that the public or workers would remain safe.

Costs associated with catastrophic accidents that result in impacts to the general public are bound by the Price Anderson Act. The Price-Anderson Act was designed to ensure that adequate funds would be available to satisfy liability claims of members of the public for personal injury and property damage in the event of a nuclear accident involving a commercial nuclear power plant. Under existing policy, owners of nuclear power plants pay a premium each year for $375 million in private insurance for offsite liability coverage for each reactor unit. This primary, or first tier, insurance is supplemented by a second tier. In the event a nuclear accident causes damages in excess of $375 million, each licensee would be assessed a

prorated share of the excess up to $111.9 million. With 104 reactors currently licensed to operate, this secondary tier of funds contains about $11.6 billion.

Claims resulting from nuclear accidents are covered under Price-Anderson; for that reason, all property and liability insurance policies issued in the U.S. exclude nuclear accidents. Insurance under Price-Anderson covers bodily injury, sickness, disease or resulting death, property damage and loss as well as reasonable living expenses for individuals evacuated. The Energy Policy Act of 2005 extended the Price-Anderson Act to December 31, 2025.

Disaster relief is also available to State and local governments under the Robert T. Stafford Disaster Relief and Emergency Assistance Act if a nuclear accident is declared an emergency or major disaster by the President. The Act is designed to provide early assistance to accident victims. Under a cost-sharing provision, State governments pay 25 percent of the cost of temporary housing for up to 18 months, home repair, temporary mortgage or rental payments and other "unmet needs" of disaster victims; the federal government pays the balance.

The comments did not provide any new and significant information; therefore, no changes have been made to the SEIS because of these comments.

Comment: *Hanford has provide employment and safety to the community. It is to be praised for that blessing to the community. However, it does not insure Hanford will never have an error.* (**023-06)** [Heartsun, Hafiz]

Comment: *It's wonderful that it's providing employment for the community, and that they have been very safe up to this point and very kind to the community with apparently minimal radioactive releases that have not created a notable spike, although I do know of individuals who do have thyroid cancer from living in the area. Regardless, the past experience of them being safe does not ensure safety in the future, and I urge you to consider that there is a toxic bomb, really. It is a controlled nuclear explosion happening that if gotten out of control will contaminate your home, like has happened at Fukushima and Chernobyl, and there is no way a human can guarantee that will not happen. So, you know, mistakes can happen, and it would be much better if there was a dam in the river there getting hydro electricity, much safer. When a hydro electric plant fails, the place is not contaminated for centuries. Thank you.* (**100-62**) [Heartsun, Hafiz]

Response to comments 023-06 and 100-62: These comments express the commenters' opinion that the benefits of employment at CGS are outweighed by the risk of an accident resulting in long-term contamination of the environment. The socioeconomic impacts of operation are discussed in Section 4.9. The environmental impacts of postulated accidents are discussed in Chapter 5. The comment did not provide any new and significant information; therefore, no changes have been made to the SEIS.

Comment: *It seems to me high time Hanford was decommissioned and cleaned up. Because of the ever present risk, through human fallibility or increasingly unpredictable, extreme weather patterns from global warming, of nuclear cataclysms, such as the ongoing melt-throughs in Fukushima, and because all nuclear power stations in the United States are at the end of their designs' lifespan, and leak, and are corroding, and are cracking, I question your relicensing of this facility on the basis of "safe environmental impact," and ask you to do the same. Instead of increasing your regulated limits and granting further allowances, I ask that you shut Hanford down and clean it up for the good of the local population and the planet we all share.* (**005-03)** [Mahood-Jose, Eileen]

Comment: *Hanford is an aging facility and has the potential to have a disaster on par to Fukishima. Hanford workers, such as my late grandfather, have suffered from exposure. We need to end that legacy. We need to protect the Northwest and make public safety a priority. Loosening restrictions should not be an option.* (**006-02)** [Greenfield, Sahnya]

Comment: *I'm extremely concerned about nuclear waste and use of nuclear materials. I do not favor renewal of licenses. It is my opinion that we need to move from nuclear to safer methods of energy. I realize nothing is without risk or harm. It is a matter of scale. Nuclear problems have the potential to do far more harm in a vastly shorter time period than any other type of energy. All it takes is one nuclear accident to create harm that lasts for extremely long periods of time. I urge you to take a firm stand away from nuclear fuels and towards safer methods of energy generation.* (**018-01)** [Ginn, Judy]

Comment: *I am writing to say that we do not approve of operating the nuclear reactor at Hanford, [Washington], due to the grave risks involved with radiation releases which could occur for any number of possible reasons, including and not limited to unsafe nuclear plant designs, radioactive waste still has no safe place to be stored, seismic activity, overloaded waste storage at facility which has NEVER been securely stored there or ANYWHERE EVER!* (**019-04)** [Radiance, Chandra]

Comment: *I insist that NRC acknowledges that all human technology is fallible, yes, even Americans, and especially nuclear reactors! Even one small accident will be permanently irreversibly genetically destructive!* (**019-10**) [Radiance, Chandra]

Comment: *I also take issue with the belief that nuclear power is "green." Certainly, it is "carbon-free." It is also "calorie-free." This superficial green-ness masks the black-ness of highlevel radioactive waste both as part of the as designed fuel cycle and the possibility of accidental or catastrophic releases. Certainly nuclear power can be construed to be superior to coal or wind or solar by comparing certain statistics. This does not make nuclear clean. The major advantage nuclear does have is a powerful political lobby and corporate cabal to spin the media and legislation in favor of its continued profits. Solar and other technologies are lagging behind nuclear in their ability to provide adequate electricity because research and development funds were slashed when Reagan took the solar panels off the white house in 1980. The big picture is that we need to catch up and phase over to less toxic and dangerous forms of power generation, not put all our eggs in the nuclear basket and arrogantly believe that a Fukushima or Chernobyl "can't happen here."* (**023-04)** [Heartsun, Hafiz]

Comment: *Nuclear Power plants are INHERENTLY UNSAFE.* (**025-02)** [Mijal, Martin]

Comment: *I wish to oppose the relicensing until 2043 of the commercial nuclear reactor at Hanford Washington because it seems to me to involve the same type of dangerous procedure as at Chernobyl. There too the plant operators wanted to increase the amount of electricity generated, so they turned off the safety measures and accelerated the generators to see if they could squeeze some extra energy out of the existing plant. Relicensing, extending the period of use of the Hanford plant, is the same sort of thing.* (**043-01)** [Bernstein, Henry T.]

Comment: *A sound NO to relicensing—it's not worth the risk. Sorry, no bomb stuff for you.* (**046-04)** [Hamachek, Louisa]

Comment: *Old power plants like Hanford's should be retired and cleaned up instead of extending their licenses to create more nuclear waste. New ones should not be funded. It is time to stop using our money to prop up dangerous illusions.* (**050-03)** [McCombs, Delbert]

Comment: *Generating nuclear power at the Columbia Generating Station is too dangerous to even permit the current license to continue in force. Apparently, the safety review by the NRC was inadequate, giving little consideration to the long term and short term safety and health issues that are foremost in the concerns of the public who are and will be impacted by this facility.* (**062-03)** [Tsongas, Theodora]

Comment: *Please do not relicense the Hanford nuclear plant until 2043. The plant is a hazard to all of surrounding residents and beyond, and should be completely decommissioned and cleaned up.* (**063-01)** [Vernhes, Laurence]

Comment: *I also take issue with the idea that nuclear power is green. It is carbon free, it's also calorie free. This superficial green-ness masks the blackness, high-level radioactive waste. Part of the designed fuel cycle and the possibility of accidental or catastrophic releases. Nuclear power can be construed to be superior to coal, or wind, or solar by comparing certain statistics, but does not make nuclear clean. The advantage nuclear power does have is a powerful political lobby and a corporate call to the media and legislation (Telephonic interference) continued profit. Other technologies are lagging behind nuclear in their ability to provide adequate electricity because research and development funds were slashed when Reagan took the solar panels off the White House in 1980, so we need to catch up and phase over to less toxic, dangerous forms of power generation and not put our eggs in a nuclear basket and arrogantly believe that a Fukushima, Chernobyl cannot happen.* (**100-60**) [Heartsun, Hafiz]

Comment: *I believe they are realizing maybe the Columbia Generating Station was a bad idea; it poses risks that are far too significant to ignore or gloss over. This plant has been identified by the industry-funded institute of the Nuclear Power Operations as one of two in the country most in need of improvements in operations and "human performance." In other words, one of the two most primary ones in the country. It has elicited heightened oversight due to a trend of too many unplanned shutdowns over the past several years. Shutdowns stress the safety systems in a plant that is nearing the end of its 20-year span originally intended to operate.* (**101-71**) [Chudy, Cathryn]

Comment: *I also find that the use of clean power is a form of propaganda literally and also anyone who says nuclear power is safe has continually ignored all of the dangers. Essentially that is what is happening. And if you continually, if the industry continually ignores long-term health effects or long-term environmental impacts when they are assessing safety standards, then anyone can say anything is safe.* (**101-85**) [Morris, Nancy]

Response to comments 005-03, 006-02, 018-01, 019-04, 019-10, 023-04, 025-02, 043-01, 046-04, 050-03, 062-03, 063-01, 100-60, 101-71, and 101-85: These comments express concerns that the risks of nuclear power are unacceptably high. The comments are general in nature and provide no new and significant information; therefore, no changes were made to the SEIS.

Comment: *Furthermore, none of these plants are insured against accidents because that would be too cost prohibitive and what insurance company will even do it? Yet, we are all required to have auto insurance in case of an accident. As we all know, nuclear power plants are not immune from accidents! When there are accidents at our nuclear power plants in the future, who will be able to afford to insure its cleanup- our bankrupt government, the fine folks from GE who brought all this good technology, no not them either, nobody will be responsible! There is no such thing as getting anything with a half life of thousands of years cleaned up anyway!* (**019-06)** [Radiance, Chandra]

Comment: *We are told that Capitalism = Freedom + Democracy. The private insurance companies will NOT insure ANY nuke plant. The immense liability is too much. E.g.: Fukushima might have generated 1$ billion in electricity. Its meltdown could easily cost 1$billion x 1$billion: 1$ thousand-trillion to repair. High radiation has been found in Toronto, Canada. Since private capitalistic insurance companies refuse to insure nukes, the fed government gives corporate welfare to these nukes by "insuring" them. Thi is another gross unfunded liability that the Tea Party is trying to eliminate. ALL nuke plants should be shutg down if they cant get private capitalistic (= Freedom) insurance!!!! The private insurance companies have no problem insuring coal or natural-gas burning power plants.* (**025-03)** [Mijal, Martin]

Response to comments 019-06 and 025-03: The NRC staff notes that nuclear power plant licensees are required to carry liability insurance, beyond which the Price-Anderson Act provides liability coverage for damage caused by an accident. This includes coverage for personal injuries and damage to private property. Additional information is available in the NRC Fact Sheet "Nuclear Insurance and Disaster Relief Funds" (http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/funds-fs.pdf). The comments, however, are outside the scope of license renewal and will not be evaluated further.

Comment: *It is an old plant and the NRC is lowering safety standards in order to be able to give a license renewal. I don't trust the regulators, they are too close to the industry.* (**009-02)** [Ray, Gisela]

Comment: *NRC has not been enforcing the safety requirements and faults in the various other nuke plants which have been inspected are not up to safe levels of functioning. NRC instead chooses to lower the "safety standards" for allowable levels of radiation. This is criminal and we urge no relicensing therefore of ANY archaic nuclear power plants nor building any new generation ones either since there is still no safe level of radiation!* (**019-07)** [Radiance, Chandra]

Comment: *I am concerned about reports of NRC weakening safety standards in order to "safely" relicense nuclear power plants. This is making nuclear power less expensive in the short term, and increasing the likelihood of accidents in the long term.* (**023-05)** [Heartsun, Hafiz]

Comment: *Quit weakening NRC standards and relicensing aging reactors. Strictly Enforce NRC regulations in timely manner and do not relicense until complied.* (**039-03)** [Jensen, Rhoda D.]

Comment: *Federal regulators have been working closely with the nuclear power industry to keep the Nation's aging reactors operating within safety standards by repeatedly weakening those standards, or simply failing to enforce them, an investigation by The Associated Press has found. Time after time, officials at the U.S. Nuclear Regulatory Commission have decided that original regulations were too strict, arguing that safety margins could be eased without peril, according to records and interviews. Associated Press has recently completed a year-long investigation into the nuclear power industry in the United States, with some disturbing results. The AP's four-part series is attached so you can read why I am so pissed off that the NRC is lower the bar of safety standards and rubber-stamping the relicensing of these relic nuclear plants! Nuclear Power plants were never built to last over 40 years and as they age, the probability of accidents increases exponentially, especially with the ever increasing unpredictability of the earth shifting in ways out of human control. There is great evidence that NRC has relaxed the standards for safety as well as not strictly enforced compliance issues if it*

meant it cost too much. Even if they were enforcing the standards of safety and not constantly lowering the bar on 'safe standards' of radiation releases. There is no way to safeguard all life from such guaranteed accidents, especially since the NRC is in cahoots with the corporate nuclear industry (i.e., paid off and govt. lobbyists are totally ignorant of the trio dangers because they are bought off politicians). Now there is all this political pressure for nuclear power being touted as 'clean & green' energy which is an absolute LIE! There has never been any SAFE level of internal radiation, it all causes genetic defects and cancer in all lifeforms, not just humans! Why do they get to 'play GOD' allowing them the power gamble everything valuable on earth for a quick buck? When these accidents start occurring like Fukushima coming home to roost, with the old reactors' get a 50 [percent] life extension policy, we are all doomed. Taxpayers, beware, for that is exactly who they will come to try to extort that money out of us to fix their horrendously ignorant mistakes for pathetic decisionmaking with zero true regard for the highest good of all concerned! Tune into what hell people are experiencing in Japan post-Fukushima and ask yourselves if that is the 'legacy' you really want to leave to the next generations of all life! Please read the 4 part series I am attaching and then in case you are some of the ill-informed, sold-out to the corporate government, then you may have a very serious wake up call to face! WAKE up stupid, it is almost already too late! we need to preserve life more than we need to derive 17 [percent] of our energy from this power plant being relicensed . The data is not out yet on the true tragedy of the radioactive nightmare of Fukushima, but Hanford could be way worse than than since Daicchi was not fully loaded and operating at the time it blew. Now it is still in criticality, meaning there were 3 meltdowns which they never thought possible. G.E. marketed that GE Mark 2 Nuke Plant design to Japan almost 40 years ago and even the designers of it resigned from working for G.E. because they said the design was inherently flawed. It was absolutely ignorant to place it on the shoreline there in Japan in a known tsunami/active seismic zone and yet, they did it anyway. Your Hanford decision to push this power plant into the future in a known earthquake area is just as ignorant! Also, to just learn that DOE was planning to run it as a MOX reactor is equally stultifying. This is a crime against all life! WTF! I have tried to see this from your point of view, i just can't get my head up my ass that far! I for one, pledge to bring all of this to the attention of my fellow species and bring this project done because we are the 99 [percent] and we are too big to fail! (**055-01**) [Radiance, Chandra]

Comment: *An investigation by the Associated Press has found that Federal regulators have been repeatedly weakening safety standards so that the nuclear power industry can keep the Nation's aging reactors operating (Telephonic interference) when simply failing to enforce the safety standards.* (**100-50**) [Berlly, Bella]

Comment: *I'm also concerned like the previous caller about the report that I heard of NRC's safety standards in order to so-call safely relicense nuclear power plants. This making nuclear power less expensive short-term, and an increased likelihood of accidents short-term.* (**100-61**) [Heartsun, Hafiz]

Comment: *If I understand correctly, the NRC position is that environmental risks exposed by Fukushima will be handled through their normal regulatory process. I find this dangerously ironic, in light of the Associated Press's [AP's] investigative report published in June of this year that Federal regulators have been repeatedly weakening safety standards or simply failing to enforce them in order to keep aging reactors operating within "safety standards." This is simply unacceptable, given the NRC's charge to ensure adequate protection of public health and safety.* (**101-78**) [Chudy, Cathryn]

Response to comments 009-02, 019-07, 023-05, 039-03, 055-01, 100-50, 100-61, and 101-78: These comments claim that the NRC is lowering safety standards to allow older plants to continue operating. In June 2011, the AP released a four-part series about aging-related issues at U.S. nuclear power plants (Donn, 2011a), (Donn, 2011b), (Donn, 2011c), (Donn, 2011d). One of the themes of the series was that the NRC was lowering standards to allow older plants to continue operating. The NRC responded to the AP series in a press release on June 21, 2011 (NRC, 2011a). In the press release, the NRC stated the following:

> A recent [AP] article focused on Federal regulation and oversight of the nuclear power industry in the United States. Although we disagree with many of their observations and conclusions, we welcome the additional attention their article brings to the critical importance of nuclear safety and security. It is this type of dialogue that helps us to engage the public and our other stakeholders, and to continue to be vigilant in all aspects of our safety mission. And, we are always committed to doing better and doing it right.

The NRC went on to provide several examples of how the agency accomplishes its mission. The press release concluded by saying, "The bottom line remains the same – the NRC sets appropriate technical requirements using impartial professional standards, expertise and analysis; we have inspectors stationed at every nuclear power plant in the country, who inspect plants every day; and we enforce our requirements to ensure the public remains safe." These comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *If the NRC truly intends on ensuring the adequate protection of public health and safety, it should deny this license renewal and apply the money that would be spent on operating safety to invest in conservation and renewable energy sources to replace the power of this reactor.* (**101-79**) [Chudy, Cathryn]

Response to comment 101-79: The purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy-planning decisionmakers, such as State, utility, and, where authorized, Federal agencies (other than NRC). This definition of purpose and need reflects the NRC's recognition that, unless there are findings in the safety review required by the AEA or findings in the NEPA environmental analysis that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy planning decisions of State regulators and utility officials as to whether a particular nuclear power plant should continue to operate. If the renewed license is issued, State regulatory agencies and Energy Northwest will ultimately decide whether the plant will continue to operate based on factors such as the need for power or other matters within the State's jurisdiction or the purview of the owners. If the operating license is not renewed, then the facility must be shut down on or before the expiration date of the current operating license, December 20, 2023. The comment did not provide any new and significant information. Therefore, no changes have been made to the SEIS.

Comment: *But I wanted to add that I think it is very disconcerting to have our PUD use the Columbia Generating Station to use nuclear power and also in one case denying documents that are necessary for further clarification on types of hardened casks for the spent fuel waste.* (**101-84**) [Morris, Nancy]

Response to comment 101-84: The commenter is expressing dissatisfaction with her public utility district's decision not to make certain documents available. The comment is noted and is outside the NRC's jurisdiction; therefore, no changes have been made to the SEIS.

A.3.13 Postulated Accidents

Comment: *We must learn from the Fukushima distaters in Japan that Mother Nature can produce surprises like earthquakes, and the human error can wreak havoc. Having nuclear reactors on the banks of the river courts disaster, which is preventable. I do not want long life radioactive isotopes getting into the Columbia (Big River) which flows thru Portland, where I live.* (**004-02**) [Arthur, Chris Carol]

Comment: *It is crucial that the EIS includes a comprehensive disclosure of risks to health, safetey and environment, including risks of catastrophic events such as what happened in Japan. A full range of possible events and their impacts must be examined, not just those that impact the immediate surrounding of air, animals, natural resources.* (**010-01**) [Greenspoon, Holly]

Comment: *Anyway, given this e-mail venue, I state that Hanford should not be relicensed. I did not participate in its construction as did the VIP who was allowed to cut in Line before the presentation period. Whatever his qualifications and however positive his regard is of the plant, it does not override physics, the inevitability of human error and extreme natural events. Similarly confident individuals built Fukushima, Chernobyl, 3 Mile Island, as well as the Challenger, Apollo 13, the Tacoma Narrows bridge, dropped conference calls and any number of failed engineering endeavors. It is noble to strive to overcome failure but it is foolish to believe it can be eliminated. Disaster will continue to happen and no one can predict how or when or what. There will continue to be deaths and damage as the shadow side of our technological progress. However, this inevitability is not an excuse for corporate/governmental denial of responsibility. The clear dangers of radioactive contamination following nuclear power plant failures is demonstrated by "dead zones" around Chernobyl and Fukushima. "Safe" and "clean" power plants do not explode and make large areas uninhabitable for centuries. Boiling water with toxic radioactivity is not a reasonable or responsible choice given the risks of catastrophic failure, which is inevitable somewhere, sometime.* (**023-02**) [Heartsun, Hafiz]

Comment: *I was watching a tv show talking about the various risks, both in the past, presently, and into the future associated with the nuclear facility in the Hanford area and would like submit my request that the Columbia Generating Station NOT have its license renewed. It appears that not only are there inherent risks in the operation of nuclear plants generally due to possible defects in the components, human error, etc., but the proximity of this particular station to a Seismic Fault Zone highly increases those risks (the Japan earthquake should make us very sensitive to this situation).* (**031-01**) [Unknown, Unknown]

Comment: *Although Hanford is located in an isolated area, there are 65,000 people nearby and millions downstream that would be affected in the event of an accident.* (**052-04**) [March, Leslie]

Comment: *I have lived in the Columbia River Gorge for 20 years. I can't believe that writing this comment is necessary to protect my health and the health of my children and grandchildren and my friends and their loved ones. Please re think the idea of relicensing the nuclear reactor at Hanford until 2043! This is not safe; we have too many risks that make this an unstable situation. We are still reeling from the damage in Japan and don't want to risk another*

catastrophe. There is no way to clean us the messes that these situations create; therefore, it is not a viable, safe option. Please just say No. (**057-01)** [Twombly, Mary]

Comment: *I did hear one man comment at the end that he was involved in the construction of the plant, and he feels confident that it's built really well. I encourage that remark, but I also want to point out that this confidence does not override the laws of physics, the inevitability of human error, or extreme natural events. Similarly, confident individuals built Fukushima, Chernobyl, Three Mile Island, as well as the Challenger Space Shuttle, Apollo 13, the Tacoma Narrows Bridge, and the people who set up this conference call. There have been any number of failed engineering endeavors, and they will continue to happen. It is hopeful to strive to overcome failure but it's foolish to believe that it can be entirely eliminated. It will continue to happen, and no one can predict how or when, or what exactly they will be. There will continue to be deaths and (Telephonic interference). However, this inevitability is not an excuse for government or corporate denial of their responsibility. Radioactivity poses a unique challenge that it creates power plants which explode and distribute toxic materials over vast areas and can create dead zones, such as around Chernobyl and Fukushima. My comment is that it's obvious to me that the danger of failure in this case far outweighs the advantages of nuclear power.* (**100-58**) [Heartsun, Hafiz]

Comment: *And lastly I would like to urge the environmental impact statement disclose the environmental impact of potential fires, explosions, climate change-related events or earthquakes, anything that might release radiation and look very closely at these, as it seems that the unusual types of events that are not so much expected such as the earthquake in Japan was so much more severe than anyone would have expected have actually been taking place.* (**101-57**) [Mann, Carolyn]

Response to comments 004-02, 010-01, 023-02, 031-01, 052-04, 057-01, 100-58, and 101-57: These comments express concerns about catastrophic natural disasters and their potential impacts on CGS. Design basis accidents and severe accidents are addressed in Chapter 5. Alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives. The NRC staff's review of severe accident mitigation alternatives (SAMA) is discussed in Section 5.3 and Appendix F. This review included the topic of seismic risk. The geologic environment (including seismology) is briefly discussed in Section 2.2.11.

Comment: *General comment. The shrub-steppe ecosystem is prone to fire. In June of 2000, a fire burned over 200,000 acres of Hanford and neighboring property. Several other fires have been in the 10,000 to 100,000 acre range. There should be a discussion of fire risk in the EIS.* (**032-04)** [McDonald, Scott]

Comment: *General comment. The shrub-steppe ecosystem is prone to fire. In June of 2000, a fire burned over 200,000 acres of Hanford and neighboring property. Several other fires have been in the 10,000 to 100,000 acre range. There should be a discussion of fire risk in the EIS.* (**072-05)** [Albin, Lynn]

Response to comments 032-04 and 072-05: The comments request that the NRC evaluate the risk of a brush fire in the SEIS. This is an emergency planning issue, which is not within the scope of the environmental review. The Commission considered the need for a review of emergency planning issues in the context of license renewal during its rulemaking proceedings on 10 CFR Part 54, which included public notice and comment. As discussed in the Statement of Consideration for rulemaking (56 FR 64966), the programs for emergency preparedness at nuclear power facilities apply to all nuclear power facility licensees and require the specified

levels of protection from each licensee regardless of plant design, construction, or license date. Requirements related to emergency planning are in the regulations at 10 CFR 50.47 and Appendix E to 10 CFR Part 50. These requirements apply to all operating licenses and will continue to apply to facilities with renewed licenses. Through its standards and required exercises, the Commission reviews existing emergency preparedness plans throughout the life of any facility, keeping up with changing demographics and other site-related factors. Therefore, the Commission has determined that there is no need for a special review of emergency planning issues in the context of an environmental review for license renewal. The comments are outside the scope of the license renewal review; therefore, no changes were made to the SEIS.

Comment: *Renovate to withstand big magnitude earthquakes and other safety threats and indicate specs/risks in EIS.* (**039-04)** [Jensen, Rhoda D.]

Comment: *You can not guarantee our safety in EarthQuakes the 3.5 in September is considered part of a frequent seismic activity on the fault Line where Hanford is. ON THE COLUMBIA! not acceptable.* (**046-02)** [Hamachek, Louisa]

Comment: *Seismic risks should be disclosed and considered in the EIS. Washington is on the Pacific Ring of Fire, we know that a magnitude 9.0 will happen on the Cascadia subduction zone, and that many other earthquakes could be triggered by it or occur independently. None of the buildings at Hanford are built to withstand the degree of seismic activity we now know we can expect. It is extremely dangerous to relicense a plant with plans to use plutonium fuel without adequately exploring and preparing for those risks. These must be addressed in the EIS.* (**053-03)** [Castle, Janice]

Comment: *The potential for a catastrophic incident, such as the overdue subduction zone earthquake in the Pacific Northwest, and its consequences, have not been considered in this environmental impact statement, nor has seismic activity in the RGS region been adequately considered including current data connecting the Yakima fold and thrust belt to active faults in the Puget lowland.* (**062-06)** [Tsongas, Theodora]

Comment: *And, the [draft] SEIS fails to update the potential costs to the environment and public health from the facility based on new information about the seismicity of the area where the Columbia Generating Station is located.* (**073-04)** [Bell, Nina]

Comment: *Does the general EIS analyze the potential for catastrophic failures at the power plant due to earthquakes or other natural causes?* (**101-17**) [Bertish, Dvija M.]

Comment: *…need to consider impacts if a national disaster such as an earthquake causes radiation leaks and how that would impact a cover for the reactor. I am thinking of things like the challenge of keeping cooling water where it is needed.* (**101-51**) [Carlson, Kevin]

Comment: *In looking at the GEIS, and our organization, the Oregon Conservancy Foundation, we are not finished in our review, but in looking at it, we find that there is no seismic analysis in the GEIS. It ignores the impact of large seismic events occurring greater than the reactor design is capable of withstanding. It fails to address the recent study that was published in the news showing earthquakes near Hanford are not as unlikely as first thought. This study was performed by Richard Blakely and his colleagues at the [U.S. Geological Survey]. There should be an analysis of this and it should be a part of this particular review.* (**101-62**) [Marbet, Lloyd]

Comment: *And there has been no seismic analysis, which is of particular concern in light of the Fukushima accident combined with new research findings related to potential seismic habits of the region.* (**101-77**) [Chudy, Cathryn]

Response to comments 039-04, 046-02, 053-03, 062-06, 073-04, 101-17, 101-51, 101-62, and 101-77: Section 2.2.11 of the SEIS includes a description of the geologic setting including historical seismicity only as it relates to the overall affected environment of the CGS site. Section 5.3 and Appendix F present an analysis of severe accident mitigation alternatives (SAMAs) which includes seismic risk.

The NRC's regulations for license renewal (10 CFR Part 54) require licensees to manage the age-related degradation of passive systems, structures, and components (SSCs) to ensure they will fulfill their safety related functions, as specified in the current licensing basis, that will continue into the period of extended operation. A plant's licensing basis, including its seismic design basis, is established during initial plant licensing. The licensing basis dynamically evolves during subsequent license amendments and licensing actions, as new information and plant modifications are incorporated into the plant design and license. The NRC has multiple processes to evaluate the adequacy of current plant operations and licensing bases (e.g., Reactor Oversight Process, Generic Issues Program) which are separate and distinct from the scope of the license renewal environmental review. If new information or operating experience warrants, the NRC will direct additional measures to maintain established safety thresholds commensurate with risk and safety benefit (e.g., require plant improvements through the backfit process). Any age-related degradation of SSCs in the application's aging management plan affected by seismic events will be evaluated by the applicant and reviewed by the NRC staff as part of the license renewal process.

Several commenters referred to a study that presented evidence of previously unidentified connections between faults in western and central Washington state (Blakely, 2011x). This information has been forwarded to the appropriate organization within the NRC for consideration as a current operating issue.

Regarding the seismic stability of structures at Hanford, the DOE's Hanford facilities comply with building standards in effect at their time of construction as well as DOE's current requirements for protection against natural phenomena hazards. Part of those current requirements is to periodically review natural phenomena hazard assessments and, if warranted, upgrade or replace the assessments. If hazards are found to have increased, modification of facility designs may be considered. In October 2011, DOE initiated a new, 3-year study of seismic hazards at the Hanford Site. This project is known as the Hanford Probabilistic Seismic Hazard Assessment. This new assessment will replace the current assessment of seismic hazards that was published in 1996.

One of the NRC's actions in response to the Fukushima accident will be to require all licensees (including Energy Northwest) to reevaluate and upgrade as necessary their design basis seismic protection of systems, structures, and components.

These comments did not provide any new and significant information. Therefore, no changes have been made to the SEIS.

A.3.14 Radiological Impacts

Comment: *In addition, monitoring of radionuclide levels in wildlife samples indicated the samples contain radionuclide below levels that are estimated to cause adverse health effects to*

animals or to the people who may consume them. But radionuclide concentrations in vegetation samples collected from, or adjacent to, waste disposal facilities were higher than concentrations in samples collected farther away, including concentrations measured offsite. As wildlife continue to ingest the affected vegetation, WDFW acknowledges that continued monitoring of vegetation and wildlife samples will be necessary to identify cumulative effects of the radionuclide through time. (**067-03)** [Posner, Stephen]

Response to comment 067-03: The NRC acknowledges the Washington Department of Fish and Wildlife's statement that, concerning the license renewal of CGS, "continued monitoring of vegetation and wildlife samples will be necessary to identify cumulative effects of the radionuclide through time." As required by 10 CFR Part 50, Appendix A, Criterion 64, a licensee operating a nuclear power plant must have a means to monitor for radioactivity that may be released from the plant. Energy Northwest currently meets the requirement for monitoring radioactivity that may be released from CGS through its REMP and will do so through the period of extended operation. Therefore, no changes to the SEIS will be made based on this comment.

Comment: *General Comment. In Section 4, the radiological environmental monitoring program is described. Starting on page 4-15, the "Special Interest Monitoring Stations" are described and is said to be done to comply with EFSEC resolutions. However, nowhere in the document does it state why the monitoring is done at those locations. At the very least, they should list the resolution that the monitoring station was developed for. NEPA documents are public disclosure documents and should give members of the public background on which to base their comments.* (**072-10**) [Albin, Lynn]

Response to comment 072-10: The purpose of the Columbia Generating Station (CGS) Radiological Environmental Monitoring Program (REMP) is to evaluate the radiological impact that operation may have on the environment. The program is designed to highlight and look at specific consumption pathways for local inhabitants and special interest groups. The types of samples collected for analysis include air, water, soil, sediment, milk, fish, and garden produce. Additionally, the program monitors direct radiation at 79 different locations. Analysis results are trended and compared to results from control locations, results obtained in previous operational and preoperational periods, and regulatory limits. Sampling for the CGS REMP program is performed as specified in Appendix I to 10 CFR Part 50 as well as agreements made with the State of Washington Energy Facility Site Evaluation Council (EFSEC).

EFSEC has been delegated authority by the U.S. Environmental Protection Agency to issue permits under the Federal Water Pollution Control Act and the Federal Clean Air Act for facilities under its jurisdiction. EFSEC also ensures that effective and coordinated nuclear emergency response plans are in place and satisfactorily tested for the Columbia Generating Station nuclear power plant located on the Hanford Site in central Washington. EFSEC Resolutions 260 and 300 are the agreements the State of Washington has with CGS in regards to environmental monitoring. State locations are additional sampling locations that are in some places co-located with existing REMP monitoring stations, but typically mirror the type of monitoring done by CGS and expand the scope of the environmental monitoring required by the NRC. There are also select Special Interest Stations to comply with EFSEC requirements for environmental monitoring. These are listed in the CGS Annual Radiological Environmental Operating Reports. They are the Storm Drain Pond, the Sanitary Waste Treatment Facility, the Cooling Tower Sediment Disposal Area, the Spray Pond Drain Field, the Independent Spent Fuel Storage Installation, and the DOE 618-11 burial ground North of CGS. The Storm Drain Pond and the Sanitary Waste Treatment Facility were incorporated into the routine sampling

schedule in 1992. In 1995, the Cooling Tower Sediment Disposal Area was added. TLDs were placed around the Spray Drain Pond in June 1995. TLD monitoring in the vicinity of the planned Independent Spent Fuel Storage Installation (ISFSI) was first performed in 1998 to collect background data and TLD monitoring was established on the ISFSI fence line after construction was completed in 2002. Air monitoring and TLDs stations were established in 2008/2009 to monitor remediation work at the DOE 618-11 burial ground North of CGS. No change will be made to the CGS SEIS as a result of this comment.

A.3.15 Radiological Waste Management

Comment: *Current disposal methods of this most toxic hazardous waste are not even adequate, minimally it needs to be in dry casks in case of fire. How in the world do any of you expect to claim this is "safe" for 24,000 years, who will be around to maintain all this mess?* (**019-09)** [Radiance, Chandra]

Comment: *Where will the waste go??? The NRC conveniently says it will not consider this most important and logical question, but we all need to point to the hypocrisy of ignoring it, especially at Hanford. The "low-level waste" from this reactor goes to the leaking, unLined commercial radioactive waste landfill in the center of Hanford (which Heart of America Northwest and the Yakama Nation are suing to try to get cleaned up).* (**019-17**) [Radiance, Chandra]

Comment: *Now that the people of Nevada have refused to allow Yucca Mountain to be filled with glassed radioactive waste, which would have created hazards due to the thousands of rail and truck journeys required to bring radioactive waste from all parts of the country. Waste needs to he held at the site at which it is produced. Eventually these sites will be full, so no more waste should be produced as the nuclear plants are decommissioned and closed, no more built, and the waste sealed there and guarded.* (**043-06)** [Bernstein, Henry T.]

Comment: *The reactor should not be relicensed until there are safe and responsible plans to deal with the nuclear waste generated by operation of the plant.* (**048-01)** [Gilbert, Steven G.]

Comment: *NRC must consider stopping all [renewed licenses] and construction until a waste site has been found. Spent fuel and waste issues need to be considered for their interactions in catastrophic incidents. Continued operation with no place to safely store the waste is unconscionable!* (**062-10**) [Tsongas, Theodora]

Comment: *And it has secure onsite storage of used fuels, and that's something that's really important today. And we're talking about what are we going to do withall the used fuels from the past, where are we going to put them; Yucca Mountain and all that, and here's a place that has its own onsite storage for used fuels.* (**100-03)** [Klippert, Brad]

Comment: *Number five, the low-level waste from this reactor goes to the commercial radioactive waste landfill in the center of Hanford.* (**100-55**) [Berlly, Bella]

Comment: *You must address the disposal of the radioactive waste from the site.* (**100-68**) [Axell, Karen]

Comment: *The second question I have is where is waste going to go that is going to be generated by the renewal of this license, since it goes to 2023? Where will the waste be going?* (**101-15**) [Morris, Nancy]

Comment: *Number two, my biggest question is where in the world will the plutonium liquid wastewaters go? I am fully aware that the NRC currently is not at all open to the question, it's psychological. And, I would like to present that low-level liquid waste is already seeping into and contaminating our environment.* (**101-36**) [Stierling, Rachel]

Comment: *My comment is that I am concerned and have been for some time and I suspect as many other people here in the audience are, about the lack of a permanent relatively safe national repository for nuclear waste for the byproducts of a power production reactor such as this clear across the Nation. And, in that regard, I thought that maybe I'd offer a suggestion is that I think personally that NRC ought to consider stopping all licensing renewals in this arena all across the Nation, as well as all construction applications until we have such a repository. And, in so doing such, it might get us all centered on this important topic.* (**101-47**) [Cox, John]

Comment: *Also, the continued operation of the Columbia Generating Station adds to the overall backlog of radioactive waste which has no final repository. It is unconscionable for this industry to continue under these circumstances and I agree with the input that was provided at least by someone that I heard at the beginning, I think about 45 minutes ago or so, who said that in fact we should hold off on licensing renewal and new license applications until that issue is resolved. We agree.* (**101-66**) [Marbet, Lloyd]

Comment: *It failed to address what will happen to the waste.* (**101-76**) [Chudy, Cathryn]

Response to comments 019-09, 019-17, 043-06, 048-01, 062-10, 100-03, 100-55, 100-68, 101-15, 101-36, 101-47, 101-66, and 101-76: The comments address the long-term storage and handling of radioactive waste at CGS.

The safety and environmental effects of long-term storage of spent fuel onsite have been assessed by the NRC. As set forth in its Waste Confidence Decision (codified at 10 CFR 51.23), the Commission generically determined that such storage could be accomplished without significant environmental impact. In the Waste Confidence Decision, the Commission determined that spent fuel can be stored onsite for at least 30 years beyond the license operating life, which may include the term of a renewed license. At or before the end of that period, the fuel would be removed to a permanent repository. In its Statement of Considerations for the 1990 update of the Waste Confidence Decision (55 FR 38472), the Commission addressed the impacts of both license renewal and potential new reactors. In its December 6, 1999, review of the Waste Confidence Decision (64 FR 68005), the Commission reaffirmed the findings in the rule. In addition to the conclusion regarding safe onsite storage of spent fuel, the Commission states in the rule that there is reasonable assurance that at least one geologic repository will be available within the first quarter of the 21st century, and sufficient repository capacity for the spent fuel will be available within 30 years beyond the licensed life for operation of any reactor. On October 9, 2008, the Commission issued a proposed revision of the Waste Confidence Decision in the *Federal Register* (73 FR 59551) for comment. This revision provided the basis for extending the time for sufficient repository capacity for spent fuel to be available from within 30 years beyond the licensed life for operation of any reactor to within 50–60 years. The proposed revision also provides reasonable assurance that spent fuel can be stored without significant environmental impacts for at least 60 years beyond the licensed life for reactor operation assuming storage of spent fuel in either a spent fuel storage basin or onsite or offsite independent spent fuel storage installation. On December 23, 2010, the Commission issued a final revision to the agency's "Waste Confidence" findings and regulation (75 FR 81037), expressing the Commission's confidence that the Nation's spent nuclear fuel can be safely stored for at least 60 years beyond the licensed life of any reactor and

that sufficient repository capacity will be available when necessary. In addition, the Commission directed the NRC staff to conduct additional analysis for longer-term storage to ensure that the NRC remains fully informed by current circumstances and scientific knowledge relating to spent fuel storage and disposal (NRC, 2010a).

Section 6.1 of the SEIS addresses the environmental impacts of the uranium fuel cycle and waste management during the period of extended operation. Section 4.11.4 discusses the cumulative radiological impact to the public and workers from continued operation CGS, its associated independent fuel storage installation, and other activities at the Hanford Site. The staff determined the cumulative radiological impacts to be SMALL.

Comment: *As far as waste transmutation goes, this is the norm in Europe and most of the rest of the world. We might call it recycling. It's against the law in the United States. That issue would have to be addressed by Congress, and hopefully members of the public can get Congress to reverse their decision made in the Carter years to not recycle, so to speak, their nuclear waste.* (**100-16**) [Oliver, Marlene]

Response to comment 100-16: Reprocessing (or recycling) of spent nuclear fuel involves the chemical treatment of the fuel to separate unused fissionable material from radioactive fission products to be used in new fuel assemblies. When most U.S. nuclear plants were built, the industry, with the Federal Government's encouragement, planned to recycle or reprocess used nuclear fuel. In 1979, President Jimmy Carter decided to ban commercial nuclear fuel reprocessing because of concerns about possible proliferation of weapons-grade material. President Reagan lifted the reprocessing ban in 1981; however, the nuclear industry had little or no interest in pursuing this option at that time. In 2008, NRC received three letters of interest from the nuclear industry to pursue licensing of reprocessing facilities. These letters indicated license application submittal in the 2012–2014 timeframe. The NRC staff responded by providing a gap analysis identifying the regulatory gaps that exist for licensing reprocessing facilities (SECY-09-0082). The staff is currently pursuing the technical basis development that would support rulemaking for licensing reprocessing facilities. This comment did not provide any new and significant information; therefore, no changes were made to the SEIS.

Comment: *The second question I have is in regard to you refer to the generic EIS. Is this the 1996 EIS? Okay. And, has it been updated to include such information as the findings about the proposed disposal of greater than Class C, which is extremely radioactive waste from decommissioning reactors, in the Energy Department's EIS? Is the NRC referring to linking to and updating in this process, based on the environmental impact statement which has dramatically different impact, especially for the Hanford Site from disposal of greater than Class C waste never before discussed? The greater than Class C EIS discusses that the Energy Department is proposing to dispose of this extremely radioactive waste and one of the locations you are looking at is Hanford, and that disposal in boreholes or in landfills at Hanford would have severe impacts on groundwater and human health. And, I looked through the references in here and I haven't found it, and I am wondering if the NRC is updating or referring to, linking to using that information.* (**101-03)** [Pollet, Gerry]

Comment: *What about the environmental impact statement on what to do with the greater than Class C waste? That is the extremely radioactive waste that comes from inside the reactor vessels, the radiated metals from decommissioning reactors. It is simply wrong to say we considered that and it has no impact because on a site-specific issue, you have to dispose of the waste not in a generic location, it gets disposed at the commercial low-level waste dump sitting in the middle of the Hanford Nuclear Reservation, which apparently the NRC is turning a*

blind eye on, even though it oversees the regulation of that plant by the State of Washington. And, let's talk about that. A, it is unlined. B, it has massive releases of chemicals and radionuclides at levels immediately dangerous to human health in terms of soil gas vapor for TCE and numerous carcinogens and other chemicals. And, this is where the EIS says there is no impact because we generically considered we have disposal capacity for low-level waste and greater than Class C waste. When did we make that decision? Fifteen years ago. That is inappropriate. It needs to be updated and look at the site-specific impacts where this reactor's waste go to get disposed. (**101-44**) [Pollet, Gerry]

Response to comments 101-03 and 101-44: The above comments relate to the EIS for DOE's remediation of the Hanford Site radioactive and hazardous wastes, with a brief mention of how it relates to NRC's GEIS for license renewal. (DOE's EIS can be found at: http://energy.gov/nepa/eis-0375-disposal-greater-class-c-low-level-radioactive-waste-and-department-energy-gtcc-waste). The discussion of DOE's remediation of the Hanford Site is outside of the scope of the CGS license renewal as well as the NRC GEIS for license renewal. As such, no changes will be made to the SEIS for CGS or the NRC GEIS for license renewal.

Comment: *You had mentioned that if you are licensed, there is currently no set dump site. But once one is established, how do you transport the waste and will you use public highways to do it?* (**101-32**) [Valiquette, Jacquelyn]

Comment: *My comment was that I don't think it is responsible to consider transporting a waste of this kind on public roads.* (**101-48**) [Valiquette, Jacquelyn]

Response to comments 101-32 and 101-48: The impacts associated with transporting fresh fuel and spent fuel and radioactive waste from a light water reactor are contained in Table S-4 in 10 CFR 51.52. A discussion of the values in Table S-4 and how they may change during the license renewal term is included in Section 6.3 of the GEIS.

In 1999, the NRC issued an addendum to the GEIS in which the agency evaluated the applicability of Table S-4 to future license renewal proceedings. In the addendum, the NRC evaluated the impacts of shipping more highly enriched fresh fuel and higher-burnup spent fuel. The NRC concluded that the values in Table S-4 would be bounding. At this time, the conditions evaluated in the addendum have not changed, and no new conditions have been introduced that would alter the conclusions in the addendum. The comments provide no new information and, therefore, will not be evaluated further.

A.3.16 Safety

Comment: *[The EIS fails to] disclose and consider the impacts of six major safety problems which NRC staff have formally reported as unresolved as of September 2011, including how - if even possible - Energy NW will ensure that embedded pipes will not fail over the next 50 years. ("Severe Accident Mitigation Alternatives" 9-14)* (**019-14**) [Radiance, Chandra]

Comment: *The EIS fails to disclose and consider the impacts of six major safety problems which NRC staff have formally reported as unresolved as of September 2011, including how - if even possible - Energy NW will ensure that embedded pipes will not fail ver the next 50 years ("Severe Accident Mitigation Alternatives" 9-14).* (**051-02)** [Adman, Eric]

Comment: *I am concerned that the EIS does not disclose and consider the impacts of the six major safety problems which NRC staff have formally reported as unresolved as of September 2011, Including whether or not Energy NW can ensure that embedded pipes will not*

fail over the next 50 years. ("Severe Accident Mitigation Alternatives" 9-14) (**052-01)** [March, Leslie]

Comment: *In September 2011, the NRC staff identified 6 major safety problems, which remain unresolved. These should be disclosed and considered, and Energy NW must demonstrate how, or if, they will ensure that embedded pipes will not fail.* (**053-02)** [Castle, Janice]

Comment: *It should disclose all unresolved safety issues.* (**100-64**) [Axell, Karen]

Comment: *I believe that the power plant should not be relicensed like all the other callers have said until we resolve these safety problems that have been formally identified by the NRC staff.* (**100-70**) [Brennan, Colm]

Comment: *It fails to disclose and consider the impact of six major safety problems that were formerly reported as unresolved by NRC staff as of September 2011.* (**101-73**) [Chudy, Cathryn]

Response to comments 019-14, 051-02, 052-01, 053-02, 100-64, 100-70, and 101-73: The comments state that the six unresolved issues (also referred to as "open items"), which are discussed in the NRC's "Safety Evaluation Report with Open Items Related to the License Renewal of Columbia Generating Station" (NRC, 2011c), need to be resolved before renewing the license. Several commenters also requested that these issues be disclosed and considered in the SEIS. These six open items have been resolved, and their final disposition is discussed in the "Safety Evaluation Report Related to the License Renewal of Columbia Generating Station" (http://pbadupws.nrc.gov/docs/ML1205/ML12059A357.pdf). These issues are not within the scope of the environmental review; therefore, no changes were made to the SEIS.

Comment: *One of my questions has to deal with neutron dosimetry and plant aging. We have a lab here at Hanford that works with reactors all over the world to determine how well they're holding up with time. And, I'm wondering if the nuclear plant here was included in that analysis of plant aging with neutron dosimetry, for example.* (**100-10**) [Oliver, Marlene]

Comment: *We already addressed the issue of plant aging and dosimetry, which impacts directly reactor safety. Hopefully, that question will be adequately answered with the proper testing.* (**100-14**) [Oliver, Marlene]

Response to comments 100-10 and 100-14: Neutron irradiation embrittlement is reviewed during the license renewal process as part of the safety review. Neutron irradiation embrittlement is an aging process that makes material more brittle and more susceptible to fractures. This occurs in components like the reactor vessel or reactor vessel nozzles where the effect of the neutron flux is significant. The NRC requires that an applicant adequately manage the effects of aging so that the systems, structures, or components function as they were originally intended to. For more information, please refer to Section 4.2 of the Safety Evaluation Report with Open Items related to the License Renewal of Columbia Generating Station (http://pbadupws.nrc.gov/docs/ML1205/ML12059A357.pdf) which addresses the time-limited aging analysis (TLAA) of reactor vessel neutron embrittlement.

A.3.17 Severe Accident Mitigation Alternatives

Comment: *Page 5-14. In Table 5.3-3, the number in the third column of the S2P2 row should be changed from $2.3x10^{-7}$ to $1.8x10^{-7}$. The number in the fifth column should be changed from $1.2x10^{-7}$ to 0. (See SEIS Chapter 5 ref. Gambhir 2011a.)* (**068-34**) [Javorik, Alex]

Comment: *Page F-3, Line 17. $1.4x10^{-6}$ should be $1.4x10^{-5}$ (See SEIS Appendix F ref. Gambhir 2011.)* (**068-38**) [Javorik, Alex]

Comment: *Page F-12. Probabilistic Safety Assessment (PSA) versions 6.21 and 7.12 should be 6.2 and 7.1, respectively.* (**068-39**) [Javorik, Alex]

Comment: *Page F-28, Lines 9, 10. $7.5x10^{-5}$ should be $7.5x10^{-6}$ and $7.4x10^{-5}$ should be $7.4x10^{-6}$* (**068-41**) [Javorik, Alex]

Response to comments 068-34, 068-38, 068-39, and 068-41: The SEIS has been revised as suggested by these comments.

Comment: *And, it is with great dismay I have to say to read in the EIS that based on NRC's incredibly lax rules, restoration of power, even after the staff identified it as a concern and suggested being able to survive without power for ten hours instead of seven and five, that was rejected by the applicant, Energy Northwest, and the NRC accepts the rejection of that as "not being cost effective." That is ridiculous. The notion that restoration of power having to wait ten hours instead of seven hours can be rejected on the basis of saying that we have done a cost-benefit analysis and the cost doesn't justify being able to do that. The same with being able to have effective diesel backup.* (**101-91**) [Pollet, Gerry]

Response to comment 101-91: The commenter is referring to the SAMAs listed under the headings "Increase availability of DC [direct current] power" and "Increase availability of onsite AC power." The cost and benefit screening analyses are summarized in the first two rows of Tables F-10 and F-11 in Appendix F. The lengths of time mentioned in the comment were the assumptions used to perform the risk reduction analysis, not the actually proposed SAMAs. The assumption merely is a way to quantify what the effect of the SAMAs would be, not an actual representation of the SAMAs. For the three relevant SAMAs, AC/DC-01 through -03, the way to estimate the risk reduction achievable was to extend the allowed period before need for recovery of AC power by 3 hours. This was the mathematical way to estimate the benefit from the following:

- provide additional DC battery capacity
- replace lead-acid batteries with fuel cells
- add a portable, diesel-driven battery charger to the existing DC system

None of these actually procedurally extends the allowed recovery time. That is the mathematical construct, termed use of a surrogate, to estimate the risk reduction. Based on this mathematical estimate, none of these three SAMAs proved cost-beneficial (the closest, AC/DC-03, had a benefit five times lower than the estimated cost). No changes were made in response to this comment.

A.3.18 Security and Terrorism

Comment: *Despite anti-terrorist measures, it cannot be guaranteed that some suicide bomber or drone will never succeed in sabotaging a nuclear power plant.* (**043-03)** [Bernstein, Henry T.]

Comment: *Put more security in place at and around the reactor site in response to the events of 9/11* (**060-03)** [Buchanan, Thomas]

Response to comment 043-03 and 060-03: Section 5.2.1 discusses severe accidents initiated by sabotage and terrorism. Since September 11, 2001, the defensive capability of the nuclear

power industry has been significantly enhanced. The NRC issued orders requiring security enhancements, conducted a three-phase audit of licensees' security programs in the weeks following the terrorist attacks, improved the process for conducting background investigations of new employees at nuclear power facilities, and initiated a number of studies related to the protection of nuclear material and facilities. The NRC also initiated a number of studies on the effects of a crash of a large commercial aircraft into a nuclear power plant. The NRC has also issued more than 60 advisories to its licensees describing changes in the threat environment and providing guidance on ways to enhance security.

NRC major actions since September 11, 2001, have included the following:

- ordering plant owners to increase physical security to defend against a more challenging adversarial threat,
- requiring strict site access controls for personnel,
- requiring licensees to conduct vehicle checks at greater stand-off distances,
- improving liaison with Federal, state, and local agencies responsible for protection of the national critical infrastructure through integrated response planning,
- enhancing communication and liaison with the intelligence community,
- improving communication between military surveillance authorities, the NRC, and its licensees to prepare power plants and to effect safe shutdown should it be necessary,
- ordering plant operators to improve their capability to respond to events involving explosions or fires,
- enhancing readiness of security organizations by strengthening training and qualification programs for plant security forces,
- enhancing force-on-force exercise to provide a more realistic test of plant capabilities to defend against an adversary force, and
- working with national experts to predict the realistic consequences of terrorist attacks on nuclear facilities, including one from a large commercial aircraft. For the facilities analyzed, the results confirm a low likelihood both for damaging the reactor core and releasing radioactivity that could affect public health and safety. Even in the unlikely event of a radiological release due to a terrorist use of a large aircraft against a nuclear power plant, the studies indicate that there would be time to implement the required onsite mitigating actions. These results have also validated the offsite emergency planning basis.

In addition, the NRC works with a variety of other Federal agencies, in particular the Department of Homeland Security and the Homeland Security Council, to ensure that security around nuclear power plants is well coordinated and that responders are prepared if a significant event occurs. If an event were to occur, the NRC would coordinate the resources of more than 18 Federal agencies in response to any radiological emergency.

A.3.19 Socioeconomics

Comment: *Page 2-55, Lines 16-20. In the draft SEIS the CGS site is identified as being in a high population area based on the population proximity criterion. This categorization stems from using a total Tri-Cities area population greater than 200,000 to say that CGS is within*

50 miles of a city larger than 100,000 persons [footnote: In Sec. 4.9.2, it is revealed that the Tri-Cities Metropolitan Statistical Area is used to represent the Tri-Cities area population. Although the combined population of Richland, Pasco, Kennewick, and West Richland is certainly well above 100,000, it seems inappropriate to refer to the Tri-Cities [metropolitan statistical area] because the [metropolitan statistical area] encompasses all of Benton and Franklin Counties, an area of almost 3,000 square miles. A similar situation exists for the Brunswick Steam Electric Plant located 15 miles from Wilmington, North Carolina. In assessing the proximity criterion, the NRC could have used the Wilmington [metropolitan statistical area] or could have summed the populations of Wilmington and the contiguous incorporated areas. Only the City of Wilmington population (then about 95,000) was used. See NUREG-1437, Supplement 25.] This approach seems a minor departure from the intent of NUREG-1437 (Vol. 2, Sec. C.1.4) wherein the proximity criterion is defined in terms of distance to "large cities" (i.e., cities larger than 100,000 residents). Thus, on Page A-76 of NUREG-1437 Vol. 2, Spokane, Washington, is identified as the city nearest to CGS. Energy Northwest believes the site area is more appropriately placed in Category 1 for proximity rather than Category 3. (**068-17**) [Javorik, Alex]

Comment: *Page 4-23, Lines 20-24. As noted above, application of the proximity criterion as described in NUREG-1437 places CGS in Category 1 for proximity.* (**068-24**) [Javorik, Alex]

Response to comments 068-17 and 068-24: The NRC believes that characterization of the Tri-Cities as a single city is consistent with the intent of the GEIS sparseness and proximity measures used to classify sites. Section 4.9.2 was revised to remove the implication that the Tri-Cities metropolitan statistical area represented the Tri-Cities area population.

Comment: *Page 4-25, Lines 17-20. The summary statement about tax-related impacts is confusing since it says that tax payments would continue even if CGS does not produce electricity. This is incorrect because the public utility privilege tax paid annually by Energy Northwest is based on the net amount of electricity generated by CGS (see ER Page 2-59).* (**068-25**) [Javorik, Alex]

Response to comment 068-25: The NRC disagrees with this comment. In Section 4.9.4.2, the NRC is referring to the payments in lieu of taxes made by Energy Northwest as a whole. These payments would continue regardless of electrical generation at CGS because Energy Northwest has other power generating stations. No changes will be made to the SEIS because of this comment.

Comment: *Section 8.5.8. The analysis of the socioeconomic impact should probably be moderate. Reasoning for this would be that non-renewal of CGS would cause the decommissioning to be done earlier. This action would coincide to a large degree with the loss of Hanford jobs due to ending of much of the cleanup there. Between the two actions, there would be a large effect to the local socioeconomic conditions of the local region.* (**072-13**) [Albin, Lynn]

Response to comment 072-13: Cumulative socioeconomic impacts of DOE's Hanford Site and CGS are discussed in Section 4.11.5.1 of the SEIS. DOE plans to continue to focus on long-term cleanup of defense wastes at Hanford (through 2090), as well as invest in local and regional economies via new energy production facilities. Given the close proximity to the Tri-Cities metropolitan area and dispersal of plant workers through various communities and counties, eventual closure and decommissioning of CGS would not be significant on a regional basis. As such, CGS is currently licensed for operation though 2023 and can continue to operate to this time without license renewal. Non-renewal of CGS, with consideration of the

Hanford Site, would continue to have a SMALL to MODERATE socioeconomic impact within the region of influence.

A.3.20 Spent Fuel Pool

Comment: *Also, storage of spent fuel should not be in pools above the reactor but in hardened concrete casks.* (**009-05)** [Ray, Gisela]

Comment: *Spent Fuel Pools at risk: much of Energy Northwest's fuel remains in a swimming pool above the reactor vessel—the same GE design as proved so dangerous at Fukushima. We urge removal to hardened concrete casks.* (**019-16**) [Radiance, Chandra]

Comment: *Remove spent fuel pools to hardened concrete casks.* (**039-05)** [Jensen, Rhoda D.]

Comment: *Four, much of Energy Northwest's spent fuel remains in a swimming pool above the reactor vessel, the same design that proved so dangerous at Fukushima. We urge removal to hardened concrete casks.* (**100-54**) [Berlly, Bella]

Comment: *I urge the removal of the spent fuel to hardened concrete casks.* (**100-67**) [Axell, Karen]

Comment: *And, I also think that we need to consider a risk assessment for the spent fuel pools that are looped through the reactor vessel. I would like to urge the use of hardened casks for the spent fuel.* (**101-52**) [Carlson, Kevin]

Comment: *I am also extremely concerned as other callers have been about the use of building spent fuel pools used for storage and precisely like those that were used in the Fukushima design. And, I would really like to urge that removal of all the spent fuel to harden concrete casts begin immediately.* (**101-56**) [Mann, Carolyn]

Comment: *As for the spent fuel and waste issues, you know, the spent fuel pool in this reactor is similar to what is in the Fukushima reactor, Mark I reactors and it raises questions again of the kind of interaction that can take place in a catastrophic event between the spent fuel pool and in the other ongoing events, such as the earthquake that is not being examined in this EIS.* (**101-65**) [Marbet, Lloyd]

Comment: *It failed to address the spent fuel pools at risk.* (**101-75**) [Chudy, Cathryn]

Response to comments 009-05, 019-16, 039-05, 100-54, 100-67, 101-52, 101-56, 101-65, and 101-75: Section 5.2.1.5 discusses the considerations of severe accident mitigation alternatives for spent fuel pools. The NRC continues to believe that U.S. nuclear power plants, including their spent fuel storage facilities, can and do operate safely. Following the events in Japan, the Commission directed the staff to establish a senior level task to conduct a methodical and systematic review of NRC processes and regulations to determine whether the agency should make additional improvements to its regulatory system and make recommendations to the Commission for its policy direction. The task force has completed its near-term review and has recommended that the NRC require licensees to install instrumentation in the spent fuel pools to monitor key parameters, to provide safety-related AC electrical power for the spent fuel makeup system, and to have installed a seismically qualified means to spray water into the spent fuel pools. The task force was silent on whether to accelerate spent fuel transfers to dry cask storage. The comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

A.3.21 Support for Renewal

Comment: *I suggest that the NRC develop some mechanism for "weighting" public comments. Those closest to the plant receive the highest weight, and the further away from the plant, the lower the weight. I live within 10 miles of Columbia Generating Station, and have every confidence that the plant is safe and sound. The City of Richland also gets its municipal water (drinking water) from the Columbia River, down-river from Columbia Generating Station. Why should someone who lives in Seattle, not down-river, not down-wind, and certainly with a huge mountain range between the plant and them, have the same voice weight, as me and my family? I have been everywhere within the Columbia Generating Station, having worked for Washington Public Power Supply System when the plant was being constructed and started operation. I raised two daughters, again within 10 miles of the plant. There is no question in my mind at all that the plant is safe to operate, that the plant staff is well trained to operate the plant safely, and the license should be renewed. Citizens from the Seattle area, raising hypothetical questions about the possibility of using mox fuel in this plant should have NO bearing on NRC's decision to extend the license.* (**012-01)** [Petersen, Gary]

Comment: *EFSEC acknowledges that CGS is an integral part of the region's power system; a license extension will ensure that the power from CGS is available to future generations.* (**028-01)** [Luce, James]

Comment: *The Columbia Generating Station has been and continues to be one of the most reliable and cost effective sources of power in the Pacific Northwest. It is imperative to the viability of our organization to continue to have access to electrical power provided by Energy Northwest via their Columbia Generating Station.* (**029-01)** [Lampson, William N.]

Comment: *Lampson International LLC has performed heavy lift rigging and transportation services for Energy Northwest for many years. Because of this close working relationship, I personally know of the excellent safety record of their organization. I also am cognizant of their superior environmental record, the fact that they employ some 1,100 highly skilled workforce in the Southeastern Washington region and the fact that they create more than $440 million in economic activity. For the sake of this region's businesses and families such as ours it is vitally important that, they be allowed to continue in operation for at least an additional 20 years, through 2043.* (**029-02)** [Lampson, William N.]

Comment: *The Nuclear Regulatory Commission is chartered with overseeing the technical and operational safety of US nuclear power units. This agency is respected worldwide for its work in ensuring safe designs and operation. The Columbia Generating Station of Energy Northwest is an example of those efforts resulting in sustainable, reliable, dispatchable, and economical electrical energy for regional customers.* (**033-01)** [Troyer, Gary L.]

Comment: *Renewing the operating license is supported by the Eastern Washington Section of the American Nuclear Society. This essential resource ensures that the region continues an abundance of base load electrical energy.* (**033-02)** [Troyer, Gary L.]

Comment: *Lack of renewal would require replacement with higher cost energy sources including a mix of carbon fuel supplies, which is currently unnecessary.* (**033-03)** [Troyer, Gary L.]

Comment: *With reliability and capacity factors for scheduled operation approaching 100 [percent]. The Columbia Generating Station is our region's best supplement to hydropower.*

Therefore, we fully endorse renewal of the operating license for Columbia Generating Station. (**033-04)** [Troyer, Gary L.]

Comment: *It is with great honor to send this letter of support of Energy Northwest from the Tri-City Regional Chamber of Commerce for their license renewal application for Columbia Generating Station with the Nuclear Regulatory Commission. The Columbia Generating Station and Energy Northwest has been a vital part of the region's energy mix and has consistently provided vast amounts of clean and affordable power to homes and businesses across the Northwest. Washington State and the Tni-Cities Region enjoy some of the lowest electrical utility rates in the United States because of the Federal hydroelectric system and the Columbia Generating Station. Economic recovery will require continued support for these reliable, clean, and low-cost baseload power sources. Renewal of this operating license is vital to meeting the region's electricity needs. It will help ensure a reasonable cost of power for households and businesses to drive a strong economy. Energy Northwest shows us their commitment to the region by their activities in the community and associations like ours. They are an integral part of our area and deserve license renewal so they can continue to offer us clean and affordable energy. On behalf of the Tri-City Regional Chamber of Commerce and its Board of Directors, we support your efforts to secure license renewal for the Columbia Generating Station with the Nuclear Regulatory Commission.* (**034-01)** [Hastings, Colin]

Comment: *We strongly support Energy Northwest's license renewal for Columbia Generating Station nuclear power plant which extends the operating license through 2043. For more than 25 years, Columbia has provided valuable electricity to the region and assisted in economic stability to the state by providing clean, affordable energy to more than a million Washington residents. As energy demand increases and climate change becomes a significant public policy issue, a diverse mix of clean energy resources will be critical to meet increasing electricity needs. For these reasons, it is imperative to maintain the vast quantity of carbon-free and baseload power Columbia Generating Station provides. We fully support Columbia receiving the 20-year license renewal from the Nuclear Regulatory Commission and encourage our 7,600 members and others to voice their support enabling the region to continue benefiting from this clean, affordable electricity.* (**035-01)** [Brunell, Don C.]

Comment: *I regret I am not able to attend the September 27th public meeting on the Columbia Generating Station's (Columbia) license renewal application, but I write in strong support of Columbia's license renewal application. This facility serves an important role in electricity generation for my constituents and the state of Washington. I urge the Nuclear Regulatory Commission to approve the license renewal application. The Columbia Generating Station, although located more than 200 miles from my legislative district, is an integral part of our state's electricity generation representing over 8 percent of our state's total generation capacity and providing electricity for more than one million homes. Columbia's generation also contributes to our regional economic competitiveness by keeping electricity rates at a reasonable level, an important component to help attract new employers. In a state with an unemployment rate of 9.3 percent, Columbia is also a strong economic engine that employs more than 1,100 people and creating more than $440 million in economic activity. Renewing the license application will ensure the continued presence of these highly-skilled, family-wage jobs that are vital to our state economy.* (**036-01)** [Dahlquist, Cathy]

Comment: *The Board of Commissioners for Mason County PUD No. 1 strongly supports the renewal of Columbia Generating Station's operating license for an additional 20 years, through 2043. For more than 25 years, Columbia has provided valuable electricity to the region and assisted in bringing economic stability to the state by providing clean, affordable energy to more*

than one million Washington homes. Washington's economy is dependent upon the low cost Federal hydroelectric system and the Columbia nuclear energy facility. Sustained strong economic recovery will require continued support of these reliable and cost-effective baseload power sources. Energy Northwest has operated Columbia as a responsible steward of the environment, and in a manner that protects the public's health and safety. The draft supplement to the generic environmental impact statement (GELS) reaffirmed Columbia's low environmental impact. The power produced by Columbia emits zero greenhouse gases, it has a small facility footprint, and it contains secure on-site storage of used fuel. (**040-01)** [Gold, Ron]

Comment: *Again, we fully support Columbia receiving the 20-year license renewal from the Nuclear Regulatory Commission, enabling the region and Mason County PUD No.1's customers to continue benefiting from this safe, clean, and affordable electricity.* (**040-03)** [Gold, Ron]

Comment: *Attached, please find a resolution from Benton County affirming our support for relicensing of the Columbia Generating Station in Washington State. Benton County appreciates the NRC's rigorous safety, security, and environmental reviews as part of the relicensing process, and we believe you will find this facility's record and importance to the community to be more than worthy of full relicensing through 2043.* (**041-01)** [Bowman, Leo]

Comment: *WHEREAS, Benton County has long recognized that it is one of America's premiere "nuclear communities," and has supported projects, policies, and programs related to nuclear industries that are integral to our region's culture and economy; and, WHEREAS, Washington's first and only nuclear power reactor - the Columbia Generating Station - has safely and effectively operated in Benton County for over a quarter century; and, WHEREAS, Columbia Generating Station's 8,100 [gigawatt] annual electrical output represents 4 [percent] of the power generated in the state of Washington; and when combined with hydropower, solar power, and wind power, provides diversity, contingency, and grid balance for our region's energy production portfolio; and, WHEREAS, operation of the Columbia Generating Station provides about 1,100 highquality jobs for our community, and generates about $440 million annually in economic activity; and, WHEREAS, the environmental, security, and safety record of the Columbia Generating Station is impeccable; and Energy Northwest has consistently shown a commitment to worker training, emergency planning, and educational outreach in regards to its operation of the Station; and, WHEREAS, the Columbia Generating Station produces clean, cost-effective power on a scale that dwarfs its physical and environmental footprint, as the Station that occupies barely a few hundred acres of land is able to power the equivalent of one million homes or supply the electrical duty of the entire city of Seattle; and, WHEREAS, the time has come re-evaluate the operating license for the Columbia Generating Station and extend its operations for an additional 20 years until the year 2043; NOW THEREFORE, BE IT RESOLVED, by the Benton County Board of Commissioners that Benton County reaffirms its support for the operation of safe, relevant nuclear industries in Benton County, including nuclear power. BE IT FURTHER RESOLVED, that the Columbia Generating Station and its operator Energy Northwest have been an asset to our community for 26 years, and that nuclear power is a vital piece of our region's and our Nation's energy portfolio. BE IT FURTHER RESOLVED, that based on the quality of this community asset and degree of this energy need, Benton County fully supports relicensing of the Columbia Generating Station by the United States Nuclear Regulatory Commission for 20 additional years of operation until the year 2043.* (**041-02)** [Bowman, Leo]

Comment: *This correspondence is sent by Public Utility District No. 2 of Pacific County in support of Energy Northwest's application to renew Columbia Generating Station's license for an additional twenty years. The District is a member of Energy Northwest and purchases a*

portion of the output from the facility through our majority wholesale power supplier, the Bonneville Power Administration. Columbia Generating Station has served the region, including our Utility, with safe, affordable, environmentally responsible Wholesale power for nearly twenty-nine years, less down time for maintenance and capital replacements. Output from the Plant, along with the Federal hydroelectric system on the Columbia and Snake Rivers, have provided a reliable, low cost resource for Northwest ratepayers. Columbia has provided a stable supply during swings in hydroelectric generation due to water and fish constraints. During these tough economic times, a resource such as the Columbia Generating Station can provide the assurance of an at cost supply to help sustain a strong recovery. Having Columbia as a baseload power source for an additional twenty years is important in meeting the region's future power requirements. The Plant generates enough power to serve the electrical needs of one million homes. All electricity produced by Columbia Generating Station is sold at cost through the Bonneville Power Administration to help cover utility loads in the Northwest. One goal of Energy Northwest is to keep output costs as low as possible without compromising the safety of the Plant. Columbia Generating Station is an environmentally responsible facility in that the power produced emits zero greenhouse emissions, has a small facility footprint, and secure on-site storage of used fuel. Due to its importance in providing a resource for future electricity needs of residents and businesses in the Pacific Northwest as described above, our PUD hopes that the Nuclear Regulatory Commission will take a good hard look at this needed license renewal for the Columbia Generating Station. Thank you for your consideration. (**042-01)** [Thompson, Diana]

Comment: *The Board of Commissioners of Public Utility District No. 1 of Franklin County, Washington supports [EN's] license renewal for the Columbia Generating Station. Mr. William Gordon, Board President, who previously sat on the Executive Board for [EN], and Mr. Stuart Nelson, who currently sits on the Participants Review Board, are well informed on the operations of the nuclear plant. For nearly 50 years Energy Northwest has produced a diverse mix of clean energy, first through hydroelectric power and later by adding nuclear, wind and solar. Utilizing carbon-free or low carbon energy sources is important to Energy Northwest and ratepayers of Franklin PUD, and throughout the Northwest. It is also vital to protecting the environment for current and future generations. Nuclear power is one of the cleanest and most reliable types of base-load generation. The majority of new renewable resources that have been developed in our region are intermittent and non-dispatchable. Thus, nuclear energy is vital to preserve the reliability of our power system. As an organization, Energy Northwest is committed to taking care of the environment. Through a comprehensive environmental stewardship program that touches every aspect of the operation, this commitment is formalized in an Environmental Management System (EMS). International Organization for Standardization 14001:2004 certification, which specifies EMS requirements, underscores Energy Northwest's commitment to the environment; exhibits compliance to international environmental standards; and provides third-party validation that Energy Northwest's EMS is effective and sustainable. We believe that this nuclear energy facility is being operated safely and in a manner that protects public health and safety. The Columbia Generating Station is an exceptionally valuable regional power asset and has been providing large quantities of safe, affordable, environmentally responsible power to Northwest ratepayers for more than 25 years. Renewal of Columbia's operating license is essential to meeting the region's current and future electricity needs. We respectfully submit this letter in support of the relicensing of the Columbia Generating Station.* (**045-01)** [Gordon, William]

Comment: *On behalf of Benton PUD's 47,000 customers, we support the renewal of the Columbia Generating Station's 20-year license with the Nuclear Regulatory Commission. The Columbia Generating Station has been supplying affordable, safe, reliable and environmentally*

responsible power to Benton PUD customers and other utilities across the Northwest for over 25 years. Renewal of Columbia's operating license is key to meeting the region's current and future electricity needs. Columbia Generating Station is valuable power asset to our region. We urge the renewal of the license so that Energy Northwest can continue to operate this facility that is critical power needs and our economy. (**065-01)** [Sanders, James W.]

Comment: *Inland Power and Light Company, a cooperatively owned utility serving 38,000 members in Eastern Washington and Northern Idaho, supports Energy Northwest's request to the Nuclear Regulatory Commission to renew the operating license of the Columbia Generating Station for an additional 20 years. For over 25 years, Columbia Generating Station has been a source of safe, reliable, clean, low cost and non carbon emitting electricity generation for the consumers of the Pacific Northwest. As a source of base load power, Columbia Generating Station is able to compliment the other electricity resources of the region including hydropower, wind and solar generation. Relicensing and continued operation of Columbia Generating Station through 2043 would capture and extend the benefits of the region's investment in this important facility. It is our understanding that Energy Northwest has completed a review of plant systems and equipment and no technical issues were identified that would prevent Columbia Generating station from obtaining consideration for a license renewal. We trust your review will find that Columbia Generating Station can continue to operate safely in the 20-year renewal period.* (**066-01)** [Caird, Michelle]

Comment: *I am writing this letter on behalf of the 704 member businesses of the Tri-Cities Visitor and Convention Bureau to express our support of the Columbia Generating Station which is operated by Energy Northwest. Tourism is vital to the economy here in the Tri-Cities Region and it is vitally important to our destination marketing efforts that our community is seen as an inviting place for visitors to invest in. In my 19 years as the President and CEO of the Tri-Cities Visitor and Convention Bureau, I have found Energy Northwest to be an excellent corporate community partner. Energy Northwest operates the Columbia River Generating Station in a safe, efficient, and responsible manner. Tourism generates $349.8 million in visitor spending each year in our region and we are fortunate to have a company like Energy Northwest that understands the importance of public health and safety, operating this important source of low cost, clean energy.* (**069-01)** [Watkins, Kris]

Comment: *We strongly support the renewal of Columbia Generating Station's operating license for an additional 20 years, through 2043. For more than 25 years, Columbia has provided valuable electricity to the region and assisted in bringing economic stability to the state by providing clean, affordable energy to more than one million Washington homes. Energy Northwest has operated Columbia as a responsible steward of the environment, and in a manner that protects the public's health and safety. The draft supplement to the generic environmental impact statement (GEIS) reaffirmed Columbia's low environmental impact. The power produced by Columbia emits zero greenhouse gases; it has a small facility footprint; and secure on-site storage of used fuel. As energy demand increases and climate change continues to be a significant public policy issue, a diverse mix of clean energy resources will be critical to meet increasing electricity needs. For these reasons, it is imperative to maintain the vast quantity of carbon-free and baseload power Columbia Generating Station provides. We fully support Columbia receiving the 20-year license renewal from the Nuclear Regulatory Commission and encourage others to voice their support, enabling the region to continue benefiting from this clean, affordable electricity.* (**071-01)** [Gott, Linda]

Comment: *I actually worked on the Columbia Generating Station when it was constructed, and I helped pay my way to go to college by the construction of that site, so I can guarantee the*

soundness of that structure simply because I worked there. So, it's got to be good if I had a hand in the construction there. (**100-01)** [Klippert, Brad]

Comment: *I also wanted to say that this is a very responsible steward in terms of our environment, this generating station. Zero, I say again, zero impact on our environment in terms of greenhouse gases. Is that great, all that power being produced by that one site without any greenhouses gases being emitted into the air.* (**100-02)** [Klippert, Brad]

Comment: *It's safe, it's reliable. I love going there and watching the sign how many days have gone past since an injury took place that resulted in a time loss accident, took place, and it goes on, and on, and on because they are so safety conscious there. Redundant safety systems to ensure safety standards exceed the requirements. I flew helicopters for the Army for 20 years, and we had two generators on that aircraft, two engines on that aircraft, five transmissions on that aircraft to make sure that that aircraft would stay in the air and keep flying. Redundant systems to ensure the safety and the production of power in that helicopter, and the same is true of Columbia Generating Station, redundant systems to insure the safety of the power that's being generated there.* (**100-04)** [Klippert, Brad]

Comment: *As an economic driver to this area, over 1,100 people are employed at Columbia Generating Station, and Energy Northwest creates more than $440 million into our economic activity in this area. Sustained strong economic recovery will require continued support of these reliable, cost- effective baseload resources. I just took a tour as a member of the Transportation Committee this last week, and it's so important these days in our economy in Washington State and the United States as a whole to ensure that our exports -- we do everything we can to keep our exports keep up with or exceed our imports. And because of the low-cost power that we produce here in Washington State, many corporations, many producers want to come here and produce their products and ship them all around the world because of the low-cost power that's produced right here by the Columbia Generating Station.* (**100-05)** [Klippert, Brad]

Comment: *So, I just would like to encourage you with all of my heart, as someone who believes in safe, reliable nuclear energy, that it would be a very wise thing on your part to extend the license for the Columbia Generating Station. Now, I've been told to ask for the next 20 years, but I've watched the Disney cartoons and I say let's extend that license to infinity and beyond. So, thank you, ladies and gentlemen, and have a great day.* (**100-06)** [Klippert, Brad]

Comment: *Colin Hastings, Vice President, Tri-City Regional Chamber of Commerce. On behalf of the Tri-City Regional Chamber of Commerce, it is my honor to support Energy Northwest for their license renewal application for the Columbia Generating Station with NRC. Columbia Generating Station and Energy Northwest has been a vital part of the region's energy mix, and has consistently provided vast amounts of clean and affordable power to homes and businesses across the northwest. Energy Northwest has operated Columbia Generating Station as a responsible steward to the environment, and in a manner that protects public health and safety. Washington State and Tri-Cities region enjoys some of the lowest electrical utility rates in the United States because of the Federal hydroelectric system in Columbia Generating Station. Economic recovery will require continued support for these reliable, clean, low-cost, baseload power sources. Renewal of this operating license is vital to meeting the region's electricity needs. It will help ensure a reasonable cost of power for households and businesses to drive a strong economy. Energy Northwest shows us their commitment to the region by their activities in the community and associations like ours. They're an integral part of this area, and deserve license renewal so they can continue to offer us clean and affordable energy. On behalf of the Tri-City Regional Chamber of Commerce and its Board of Directors, we support*

their efforts to secure license renewal for the Columbia Generating Station with the NRC. (**100-13**) [Hastings, Colin]

Comment: *But what I would like to talk about today, I want to echo a lot of what Colin said, hitting the major points of the benefits of Columbia Generating Station. But one that I really want to emphasize is the baseload generation. At Benton PUD, we are faced with, as many PUDs in the state are faced with, meeting a renewable portfolio standard. And, it's difficult because the wind just doesn't blow all the time. And, we are really concerned about what the future is going to look like for our generation portfolio. And, we really would like to emphasize that it's good to have this resource in our community that is reliable and consistent, and produces a lot of megawatts. I believe you would need about 1,000 wind turbines to produce what Columbia Generating Station produces. So, from a visual pollution point of view, I hike up on Rattlesnake Mountain about three times a week, and I look out at the area. And, I can see a few wind turbines over here, and that looks nice. And, I can see Columbia Generating Station over here, and that looks nice, but I wouldn't want to see 1,000 wind turbines. I much prefer the small footprint of Energy Northwest, and the baseload that it gives us. And, I'd like to say that the ratepayers in Benton County support the continued operation of Columbia Generating Station and the pursuit of the license renewal.* (**100-18**) [Sanders, Lori]

Comment: *I'm here mainly to talk today about what I see and know as the economic benefits of having a nuclear power station, a reliable one such as Energy Northwest has with the Columbia Generating Station. They have a highly skilled workforce of 1,100 people. That's 1,100 people that we need to keep in this community, especially in a time of, I don't want to call this a recession, I think we're in a depression economically nationwide, and I don't think we've accepted that yet. We're losing jobs left and right. We're going to lose 3,500 jobs total by the end of October at the Hanford Site, and we need those 1,100 jobs in this community. They're highly skilled people, and it does add to our job base, as well as to our economy because they're out there buying durable goods, which we need to have purchased. And they're also buying homes. Energy Northwest itself creates $440 million of economic activity in this area. We need that kind of purchasing power and spending power by Energy Northwest, and by the Station itself, because that does provide us with a great deal of money in this community that we all need.* (**100-22**) [Haler, Larry]

Comment: *In general, Energy Northwest is a good neighbor. They have been a good neighbor for 25 years, and I would encourage the NRC, as well as this community to support the relicensing of this facility.* (**100-24**) [Haler, Larry]

Comment: *I'm an energy consultant, and I believe that the energy from -- the baseload energy from the Columbia Generating Station is a vital part of our community. It represents a terrific economic force not only now, but well into the future. The facility, as I see it and as I read is perfectly sound, should go ahead. It should be approved expeditiously, as to eliminate any doubt.* (**100-31**) [Holder, Carl]

Comment: *The terrific use of the ability of Columbia Generating Station to achieve low-cost power for our region, to be able to work in concert with the river system and with the potential for renewable wind energy. And, as many people have noticed, wind energy in this part of the world, it may be 20 percent at best, but I like to say it's either on or off. Our society does not work on energy that is off. We need the baseload energy of the Columbia Generating Station, and thank you for expeditiously moving this forward.* (**100-33**) [Holder, Carl]

Comment: *Let me just start by saying I believe that I'm very uniquely qualified to speak today. I happen to live and have lived within miles of the plant ever since it was built and started up. I*

have a daughter, my eldest daughter, who worked out there for a period of time within the plant. If there was anybody who had any concern whatsoever about that reactor you would think it would be the people who live closest to the reactor. And, I have no concern whatsoever. (**100-40**) [Petersen, Gary]

Comment: *Energy Northwest has been a TRIDEC member since the early 1960s. I am here today to speak in favor of Energy Northwest's license renewal application for Columbia Generating Station. The Tri-Cities is the fastest growing region in the state, if not in the country. It continues to be identified as being one of the top ten growing areas in the United States. The Columbia Generating Station produces 1,157 megawatts of power. By 2020, Bonneville Power Administration said that this area will need an additional 150 megawatts of power. The license is a key to meeting the region's current and future electric needs, and it's equally important that Columbia Generating Station represents one of the lowest cost, baseload clean energy options available, zero greenhouse gas emissions. From an environmental perspective, Energy Northwest has operated Columbia in a manner that protects the public's health and safety. I should know, I live within 10 miles of the plant. And, [Columbia] is a responsible steward of the surrounding environment. We support the NRC's preliminary recommendation that Columbia does not have any environmental impacts that would preclude the option of granting a license extension for an additional 20 years. Finally, Columbia is an important employer, as Larry Haler has said, with over 1,100 highly skilled employees. At a time when we're seeing a downturn in employment at the Hanford Site each of these jobs becomes critically important to us.* (**100-41**) [Petersen, Gary]

Comment: *The Nuclear Regulatory Commission is chartered with overseeing the technical and operational safety of the U.S. nuclear power units. This Agency is responsible worldwide for its work, is respected worldwide for its work in ensuring safe designs and operation. The Columbia Generating Station of Energy Northwest is an example of those efforts resulting in sustainable, reliable, dispatchable, and economical electric energy for regional users.* (**100-43**) [Troyer, Gary L.]

Comment: *Renewing the operating license is supported by the Eastern Washington section of the American Nuclear Society. This essential resource, Columbia Generating Station, ensures that region continues an abundance of baseload electrical energy.* (**100-44**) [Troyer, Gary L.]

Comment: *I can't think of an industry that has had more oversight, both environmentally and safely and safety such to expand the NRC and nuclear industry and rightly so. And, being that, it was kind of a coincidence I happened to go on a tour of the B Reactor here this past Saturday. And, it was nice. Not that there is comparison with Columbia Generating but our Nation does have a broad history of using nuclear power. And, this site, the Columbia Generating Station, it is a strong asset and uses that appropriately.* (**101-33**) [Sargent, Rich]

Comment: *Having built nuclear plants, worked in coal-fired plants and built them, and worked in and built refineries, there is no easy way for me to say this. I feel much safer working in a nuke plant than I did at the previous two.* (**101-83**) [May, Edward R., II]

Response to comments 012-01, 028-01, 029-01, 029-02, 033-01, 033-02, 033-03, 033-04, 034-01, 035-01, 036-01, 040-01, 040-03, 041-01, 041-02, 042-01, 045-01, 065-01, 066-01, 069-01, 071-01, 100-01, 100-02, 100-04, 100-05, 100-06, 100-13, 100-18, 100-22, 100-24, 100-31, 100-33, 100-40, 100-41, 100-43, 100-44, 101-33, 101-83: These comments are general in nature and are primarily supportive of Energy Northwest, nuclear power, or license renewal for CGS. The comments did not provide any new and significant information; therefore, no changes were made to the SEIS.

A.3.22 Terrestrial

Comment: *The Department of the Interior has reviewed the Notice of Availability of Draft Supplement 47 to the generic environmental impact statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station. The Department does not have any comments to offer. We appreciate the opportunity to comment.* (**061-01**) [O'Brien, Allison]

Response to comment 061-01: The NRC notes that the Department of the Interior has reviewed the draft SEIS and has no comments.

Comment: *Page 2-40, Line 19. Reference EN 2003b is cited as the source for information about the percentage of vascular plants on the Hanford Site that are non-native. This information is not contained in the referenced document. Duncan et al., 2007 (Page 4.87) appears to be a more appropriate source.* (**068-12**) [Javorik, Alex]

Response to comment 068-12: Corrected reference in Chapter 2 as suggested.

Comment: *Page 2-42, Lines 6-12. EN 2009 is cited as a source for information about birds sighted around the CGS site. This report on the results of the 2008 radiological environmental monitoring program does not contain information about bird sightings. Furthermore, the ten frequently sighted birds listed in this sentence were for observations of 25 species made in 1987, not for the 72 species observed from 1981 through 1987 (SEIS references WPPSS 1988 and EN 2010). Recommend deleting reference to EN 2009.* (**068-13**) [Javorik, Alex]

Response to comment 068-13: Deleted reference EN 2009. Added reference WPPSS 1988. Revised Chapter 2 to state that the top 10 were from the 1987 study.

Comment: *Page 2-42, Line 26. The statement that any bird injuries or deaths are reported to the USFWS or WDFW is incorrect. We suggest that the sentence be changed to read: "Depending on the species involved, bird injuries and deaths are also reported ...." (See SEIS Chapter 2 ref. Gambhir 2010b.)* (**068-14**) [Javorik, Alex]

Response to comment 068-14: Revised sentence in Chapter 2 as suggested. Changed reference from EN 2010 to Gambhir 2010b.

Comment: *Page 2-42, Lines 37, 39. CGS procedures provide that environmental evaluations can be documented on other than forms, including memos and reports. Accordingly, we suggest that Line 37 be revised to read: …checklists and environmental evaluations. If the..." Line 39 should read: "...also be completed. Environmental evaluations require..."* (**068-15**) [Javorik, Alex]

Response to comment 068-15: Revised sentences as suggested.

A.4 References

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Donn, J., "US nuclear evacuation plans haven't kept up with population," Associated Press, June 27, 2011 (2011c), Available URL: http://today.msnbc.msn.com/id/43529122/ns/today-today_news/t/us-nuclear-evacuation-plans-havent-kept-population/ (Accessed January 6, 2012).

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EN, "Columbia Generating Station, Docket No. 50-397, Response to Request for Additional Information, License Renewal Application," February 7, 2012, ADAMS Accession No. ML12040A017.

Northwest Power and Conservation Council (NWPCC), Sixth Northwest Conservation and Electric Power Plan, Document 2010-09, Available URL: http://www.nwcouncil.org/energy/powerplan/6/default.htm, 2010 (Accessed December 16, 2011).

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U.S. Fish and Wildlife Service (USFWS). 2011. Letter from K. S. Berg, Manager, Washington Fish and Wildlife Office, to D. Wrona, Branch Chief, NRC. Subject: Section 7 consultation for Columbia Generating Station. October 5, 2011. ADAMS No. ML11291A157.

U.S. Nuclear Regulatory Commission (NRC), "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Washington, D.C., NUREG-1437, Volumes 1 and 2, 1996, ADAMS Accession Nos. ML040690705 and ML040690738.

NRC, "Section 6.3—Transportation, Table 9.1, Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants, Final Report," Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG-1437, Washington, D.C., Volume 1, Addendum 1, 1999, ADAMS Accession No. ML040690720.

NRC, "Columbia Generating Station, Amendment 60 to Final Safety Analysis Report," December 14, 2009, ADAMS Accession No. ML093620243.

NRC, Memorandum, "Staff Requirements – Affirmation Session, 8:45 a.m., Wednesday, September 15, 2010, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," (2010a) ADAMS Accession No. ML102580229.

NRC, Meeting Summary, " Summary of Public License Renewal Overview and Environmental Scoping Meetings Related to the Review of the Columbia Generating Station License Renewal Application," May 10, 2011 (2010b), ADAMS Accession No. ML101250540.

NRC, Letter from D. Wrona, Branch Chief, to Mr. S.K. Gambhir, Vice President,Technical Services, Columbia Generating Station, Energy Northwest. Subject: Issuance of Environmental Scoping Summary Report Associated with the Staff's Review of the Application by Energy Northwest for Renewal of the Operating License for Columbia Generating Station. December 29, 2010 (2010c), ADAMS No. ML102770232.

NRC, “NRC Ensures Public Safety through Rigorous Oversight of Nuclear Power Plant Safety Standards,” June 21, 2011 (2011a), ADAMS Accession No. ML11174A232.

NRC, "Recommendations for Enhancing Reactor Safety in the 21st Century, The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," July 12, 2011 (2011b), ADAMS Accession No. ML111861807.

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NRC, “Response to Request for Additional Public Meetings Regarding Columbia Generating Station License Renewal Environmental Review,” November 2, 2011 (2011d), ADAMS Accession No. ML11294A509.

NRC, "Columbia Generating Station License Renewal Environmental Review," January 31, 2012 (2012a), ADAMS Accession No. ML11355A042.

NRC, "Columbia Generating Station License Renewal (Log No. 121007-20-NRC)," January 31, 2012 (2012b), ADAMS Accession No. ML11356A254.

NRC. Letter from D. Wrona, Branch Chief, to M. Wright, Archeaologist, Department of Energy. Subject: Columbia generating Station License Renewal Environmental Review. February 3, 2012. ADAMS No. ML12018A251.

Whitlam, Rob, State Archaeologist, State of Washington Department of Archaeology & Historic Preservation, letter to D.W. Wrona, NRC, "Columbia Generating Station License Renewal," September 1, 2011, ADAMS Accession No. ML11252B053.

A.5 Public Meeting Transcript Excerpts and Comment Letters

The following pages contain the comments from public meeting transcripts and letters. Individual comments are identified by a box and comment ID.

9/1/2011
76FR54502 (1)

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

September 1, 2011

Mr. David J. Wrona
Division of License Renewal
Nuclear Regulatory Commission
Washington, D.C., 10555-0001

Re: Columbia Generating Station License Renewal
Log No.: 121007-20-NRC

Dear Mr. Wrona:

001-1

Thank you for contacting our department. We have reviewed the materials you provided for the proposed Columbia Generating Station License Renewal in Richland, Benton County, Washington.

We concur with your Determination of No Adverse Effect based upon the implementation of the Cultural Resources Protection Plan and the identified stipulations on page 4-28 including the training elements on lines 6 thru 15. We look forward to the development of the Training Agendas and the CRPP scheduled revisions.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360)586-3080
email: rob.whitlam@dahp.wa.gov

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION
Protect the Past, Shape the Future

SUNSI Review Complete
Template = ADM-013

ERIDS = ADM-03
Cdd = J. Doyle (did)
S. Frikerman (SZF)

9/1/2011
76FR54502
(2)

Friends of the Earth

September 1, 2011

RECEIVED
2011 SEP -9 PM 2:38
RULES AND DIRECTIVES BRANCH

Cindy Bladey
Chief, Rules, Announcements, and Directives Branch (RADB)
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: Docket ID NRC-2010-0029, Draft Supplement to EIS for Columbia Generating Station

To Whom it Concerns:

002-01

Though the issue of use of mixed plutonium-uranium fuel, so-called mixed oxide fuel (MOX), is not a formal part of the relicensing process, it is imperative that information be entered into the record given the known interest of Energy Northwest to investigate the use of MOX in the Columbia Generating Station (CGS).

I hereby include the two attachments for part of the docket record:

1. Issue brief of July 2011 which outlines the myriad of troubles with the Department of Energy's MOX program. Potential use of MOX by Energy Northwest is mentioned in the issue brief. (2 pages)

2. News release entitled "Secret plan exposed to use surplus weapons plutonium in Washington State reactor – FOIA documents reveal Energy Northwest plans plutonium fuel (MOX) experiments while seeking to control information leaks to the media." (3 p.)

As use of MOX fuel in the Columbia Generating Station would make the reactor harder to control, would lead to more radiation release in case of a severe accident, and would alter the way the hotter MOX spent fuel is stored, the idea to use MOX has already caused concern by the public. Especially given that the CGS is a GE Mark II boiling water reactor, similar in design to the reactors which suffered meltdown at Fukushima, any proposal to use MOX will be met with close scrutiny.

If a license amendment is sought to test MOX, which would be over a period of three fueling cycles, or to use MOX on a larger basis, it is clear that any review by the NRC will trigger formal public participation and involvement. We will thus be attentive to any licensing actions concerning MOX.

Thank you for posting this letter and the attachments both in the pertinent docket as well as ADAMS.

Sincerely,

Tom Clements

E-RIDS= ADM-03
Add= D. Doyle (did)
S. Freeman (SZF2)

SUNSI Review Complete
Template= ADM-013

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Supporting Information located in ADAMS - Accession No. ML11256A010

9/1/2011
76FR54502

PUBLIC SUBMISSION (3)

As of: September 27, 2011
Received: September 25, 2011
Status: Pending_Post
Tracking No. 80f2b78d
Comments Due: November 16, 2011
Submission Type: Web

Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0016
Comment on FR Doc # 2011-22415

Submitter Information

Name: Robert Apple
Address:
2509 N Upriver Ct
Spokane, WA, 99217
Submitter's Representative: self
Organization: Spokane City Council (member)
Government Agency Type: Local
Government Agency: City

General Comment

003-01
There is no reasonable justification to re-license this defunct nuclear reactor. It should be made required and cannot possibly meet today's new found standards of operation so allowing this reactor to be restarted and at some later date, is an irresponsible action. This reactor should be forced to go through all necassary relicensing as a new reactor would and meet all present standards without exception aswell.

003-02
Or the leaky pipes under a reactor now commonly being found should disqualify it at the least and of the number of faults of old reactors now being found.

SUNSI Review Complete
Template = ADM-013

E-RFDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

PUBLIC SUBMISSION

As of: September 27, 2011
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

9/1/2011
76FR54502 (4)

Document: NRC-2010-0029-DRAFT-0017
Comment on FR Doc # 2011-22415

Submitter Information

Name: Chris Carol Arthur MD
Address:
3343 Ne 18th
Portland, OR, 97212
Organization: Heart of America

General Comment

Please do not use plutonium fuel in Energy NW Columbia Generating Station. 004-01

We must learn from the Fukushima distaters in Japan that Mother Nature can produce surprises like earthquakes, and the human error can wreak havoc. 004-02
Having nuclear reactors on the banks of the river courts disaster, which is preventable.
I do not want long life radioactive isotopes getting into the Columbia (Big River) which flows thru Portland, where I live.

We the people do not need the energy these plants might generate. There is so much energy on the grid sometimes that the windmills have to be disconnected. 004-03
Conservation is the healthy way to proceed, and we the people are willing to conserve.

We the people want all the long life radioactive filth at Hanford cleaned up now and placed in sites which can be maintained and supervised. No more leaking into the ground. 004-04
If small countries can do this, so can we.

Mother Earth might say about Hanford:
"What a mess! You people make this mess; now clean it up, all of it!"

E-RIDS = ADM-03

SUNSI Review Complete
Template = ADM-013

Add = D. Doyle (dld)
S. Freeman (SXF1)

PUBLIC SUBMISSION

As of: September 27, 2011
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Tracking No. 80f2cbbc
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0018
Comment on FR Doc # 2011-22415

Submitter Information

9/1/2011
76FR54502
(5)

Name: Rev. Eileen Mahood-Jose
Address:
11 Nicholas Street
Little Ferry, NJ, 07643

General Comment

005-01 Why does your EIS for license renewal of the Hanford plant not mention or factor in use of MOX fuel, which was utilized and exacerbated exponentially the extent of the damage and contamination through fallout from Fukushima to as far east as Romania?

005-02 As I understand it, Hanford manufactured plutonium for the bombs dropped on Hiroshima and Nagasaki, so it has been intimately involved, since the inception of the nuclear industry. Is it true that there is still 53 million gallons of liquid waste and 25 million cubic feet of solid waste stored at Hanford? Is ground water in a 200 square mile area beneath this site still highly contaminated?

005-03 It seems to me high time Hanford was decommissioned and cleaned up. Because of the ever present risk, through human fallibility or increasingly unpredictable, extreme weather patterns from global warming, of nuclear cataclysms, such as the ongoing melt-throughs in Fukushima, and because all nuclear power stations in the United States are at the end of their designs' lifespan, and leak, and are corroding, and are cracking, I question your re-licensing of this facility on the basis of "safe environmental impact," and ask you to do the same. Instead of increasing your regulated limits and granting further allowances, I ask that you shut Hanford down and clean it up--for the good of the local population and the planet we all share.

005-04 And please DO NOT bring MOX fuel to the U.S.

Thank you for your time.

E-RIDS = ADM-03
Add = D. Doyle (dcd)
S. Freeman (SXF1)

SUNSI Review Complete
Template = ADM-013

9/1/2011
76 FR 54602

PUBLIC SUBMISSION

(6)

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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0019
Comment on FR Doc # 2011-22415

Submitter Information

Name: Sahnya Greenfield
Address:
63175 Desert Sage St
Bend, OR, 97701
Organization: iconcerned ndividual

General Comment

Docket #: NCR - 2010-0029

006-01
I oppose the re-licensing of the Hanford reactor and the use of Plutonium fuel. Hanford is an aging facility and has the potential to have a disaster on par to Fukishima. Hanford workers, such as my late grandfather, have suffered from exposure. We need to end that legacy. We need to protect the Northwest and make public safety a priority. Loosening restrictions should not be an option. 006-02

SUNSI Review Complete
Template = ADM-013

ERDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (szf1)

9/1/2011
76 FR 54502

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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0020
Comment on FR Doc # 2011-22415

Submitter Information

Name: Nancy Coscione
Address:
8538 N. Syracuse St.
Portland, OR, 97203

General Comment

As a resident of Portland, OR who stands to be effected if an accident occurs at Columbia Generating Station, resulting from an earthquake, human error, etc. I would like for the plant's license to NOT be renewed and instead would like to see it safely shut-down. 007-01 Let Washington state lead the way in implementing safe, clean, green alternative energy solutions for it's electricity needs which would also result in the creating much needed jobs. 007-02 Thank you.
Sincerely, Nancy Coscione

SONSI Review Complete
Template = ADM-013

E-RIDS=ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

9/1/2011
76 FR 54502

PUBLIC SUBMISSION

8

As of: September 28, 2011
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Tracking No. 80f3d169
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0021
Comment on FR Doc # 2011-22415

Submitter Information

Name: Gretchen Randolph
Address:
13635 SW 115th Ave
portland, OR, 97223

General Comment

008-01

The Columbia River and Portland Oregon are already at great risk for radioactive contamination. Clean up Hanford. Don't produce more of the most toxic poison known to mankind.
I am contacting Senator Merkely and Wyden to stop the citizens from insuring these dangerous plants.

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dmd)
S. Freeman (SRF1)

9/1/2011
76FR54502

PUBLIC SUBMISSION

9

As of: September 28, 2011
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0022
Comment on FR Doc # 2011-22415

Submitter Information

Name: Gisela Ray
Address:
85 SE 16th Court
Gresham, OR, 97080
Organization: hoanw
Government Agency: U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001

General Comment

Docket number: NRC-2010-0029

Cindy Bladey, (RADB),
Office of Administration,
Mail Stop: TWB-05-B01M,

009-01
I am opposed to the relicensing of the Columbia Generating Station reactor. 009-02 It is an old plant and the NRC is lowering safety standards in order to be able to give a license renewal. I don't trust the regulators, they are too close to the industry. 009-03 This reactor will keep producing nuclear waste at a place which already needs cleaning up of its leaking waste storage.
Further the EIS should consider the safety of this new fuel and the potential pollution in case of an explosion, 009-04 fire or eathquake. 009-05 Also storage of spent fuel should not be in pools above the reactor but in hardened concrete casks.
We should concentrate on conservation and renewable energy sources. 009-06

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

9/1/2011
76 FR 54502

PUBLIC SUBMISSION (10)

As of: September 28, 2011
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Status: Pending_Post
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0023
Comment on FR Doc # 2011-22415

Submitter Information

Name: Holly Greenspoon
Address:
13732 217th Ave SE
Issaquah, WA, 98027

General Comment

It is crucial that the EIS includes a comprehensive disclosure of risks to health, safetey and environment, including risks of catastrophic events such as what happened in Japan. A full range of possible events and their impacts must be examined, not just those that impact the immediate surrounding of air, animals, natural resources. 010-01 Even though a separate process must be followed to permit the use of the experimental plutonium 010-02 (that was used in Fukushima) this EIS must disclose the risks of using this Plutonium so that the public understands what is at stake in granting the renewal of Columbia Generating Station. Thank you!

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

9/1/2011
76FR54502

PUBLIC SUBMISSION

11

As of: September 28, 2011
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Tracking No. 80f3fb27
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0024
Comment on FR Doc # 2011-22415

Submitter Information

Name: Warren Zimmermann
Address:
2229 SE Spruce St
Hillsboro, OR, 97123

General Comment

011-01

The license renewal of the Columbia Generating Station and all other nuclear plants should be delayed until it is known fully what happened at the Fukushima disaster and safety modifications based on the findings are incorporated into the NRC review process.

Thank you.

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dad)
S. Freeman (SZF1)

9/1/2011
76 FR 54502

PUBLIC SUBMISSION

12

As of: September 28, 2011
Received: September 28, 2011
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Tracking No. 80f40887
Comments Due: November 16, 2011
Submission Type: Web

Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0025
Comment on FR Doc # 2011-22415

Submitter Information

Name: Gary Petersen
Address:
7130 W. Grandridge Blvd, Ste. A
Kennewick, WA, 99336
Organization: TRIDEC (Tri-City Development Council)

General Comment

012-01

I suggest that the NRC develop some mechanism for "weighting" public comments. Those closest to the plant receive the highest weight, and the further away from the plant, the lower the weight.

I live within 10 miles of Columbia Generating Station, and have every confidence that the plant is safe and sound. The City of Richland also gets its municipal water (drinking water) from the Columbia River, down-river from Columbia Generating Station.

Why should someone who lives in Seattle, not down-river, not down-wind, and certainly with a huge mountain range between the plant and them, have the same voice weight, as me and my family?

I have been everywhere within the Columbia Generating Station, having worked for Washington Public Power Supply System when the plant was being constructed and started operation. I raised two daughters, again within 10 miles of the plant.

There is no question in my mind at all that the plant is safe to operate, that the plant staff is well trained to operate the plant safely, and the license should be renewed.

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

Citizens from the Seattle area, raising hypothetical questions about the possibility of using mox fuel in this plant should have NO bearing on NRC's decision to extend the license.

This 1157 Mw of base load power is critical to the BPA system, and must be continued. 012-02

Sincerely,

Gary R. Petersen, home address
238 Somerset,
Richland, WA 99354

9/1/2011
76FR 54502

PUBLIC SUBMISSION

13

As of: September 29, 2011
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0026
Comment on FR Doc # 2011-22415

Submitter Information

Name: Tom May
Address:
1117 West 9th Ave.
Spokane, WA, 99204
Submitter's Representative: N/A
Organization: N/A
Government Agency: N/A

General Comment

I support Heart of Americal NW and am personally asking for regional hearings on the draft EIS for relicesning. 013-01

Thanks, Tom May, Attorney at Law, Spokane, WA

SUNSI Review Complete
Template = ADM-013

ERIDS = ADM-03
Add = D. Doyle (dtd)
S. Freeman (SZF1)

9/1/2011
76FR 54502

PUBLIC SUBMISSION

14

As of: September 29, 2011
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Tracking No. 80f415db
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0027
Comment on FR Doc # 2011-22415

Submitter Information

Name: Edith Downing
Address:
1703 Circle Loop "SE
Lacey, WA, 98503-2584
Submitter's Representative: Adam Smith
Organization: Democratic forum, Panorama City
Government Agency Type: Local
Government Agency: Thurston county democratic Forum

General Comment

014-01

I am a concerned resident of
Thurston county. I believe I, as a rsident, should have full knowledge of what is being considered that will affect my welfare as well as that of my feloow countians and state--and NATION!I B ELIEVE I AS A RESIDENT SHOULD BE ENTITLED TO THIS!!

EIDTH SINCLAIR DOWNING

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

9/1/2011
76FR54502

PUBLIC SUBMISSION

15

As of: September 29, 2011
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0028
Comment on FR Doc # 2011-22415

Submitter Information

Name: Kathleen Bushman
Address:
12024 SE River Road # 3
Milwaukie, OR, 97222

General Comment

Please take the safety of citizens in the NW seriously - as has not been done in the past. Leakage is already verified and Hanford is a superfund site. 015-01

I will do everything I can to unseat this Administration for its continued support for nuclear energy under the pretext that it's green and sustainable. Nuclear energy cannot be legitimately described as "sustainable" - at least as long as human life is included in your calculations of what can and should be sustained. 015-02

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

9/1/2011
76 FR 54502
(16)

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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0029
Comment on FR Doc # 2011-22415

Submitter Information

Name: Merry Ann Peterson
Address:
20315 Marine View Drive SW
Normandy Park, WA, 98166-4211

General Comment

016-01

I am not in favor of re-licensing any nuclear plant until the clean-up can be accomplished at Hanford. We need to make sure radiation cannot get into the river, or the land, or the air. I don't believe that has been done. To me it is vital that the clean-up be done for our community and the world. Thank you.

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Cadi = D. Doyle (dld)
S. Freeman (szf1)

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PUBLIC SUBMISSION

17

As of: September 29, 2011
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0030
Comment on FR Doc # 2011-22415

Submitter Information

Name: Anne Moore
Address:
P.O. Box 604
Bingen, WA, 98605

General Comment

017-01

I oppose the relicensing of the Engergy Northwest Nuclear Plant in Richland, WA.
It is old and it is unsafe. It is definitely NOT "clean energy"!
What happens if there is an earthquake? Where is all the toxic, radioactive waste going to be stored?
Let's get Handford CLEANED UP once and for all, and use the taxpayer's money for true clean energy.

- Anne Moore

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Cell = D. Doyle (dtd)
S. Freeman (SZF1)

9/1/2011
76 FR 54502

PUBLIC SUBMISSION

18

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Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0031
Comment on FR Doc # 2011-22415

Submitter Information

Name: Judy Ginn
Address:
7815 85th Place SE
Mercer Island, WA, 98040

General Comment

Dear Sir or Madam,

I'm extremely concerned about nuclear waste and use of nuclear materials. I do not favor renewal of licenses. It is my opinion that we need to move from nuclear to safer methods of energy. I realize nothing is without risk or harm. It is a matter of scale. Nuclear problems have the potential to do far more harm in a vastly shorter time period than any other type of energy. All it takes is one nuclear accident to create harm that lasts for extremely long periods of time. I urge you to take a firm stand away from nuclear fuels and towards safer methods of energy generation. 018-01

SUNSI Review Complete
Template = ADM-013

E-RIDS=ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

(19) 9/1/2011 76FR54502

RULES AND DIRECTIVES BRANCH USNRC

Gallagher, Carol

2011 SEP 29 PM 2:39

RECEIVED

From: Sola' & Inayat [oneness@gorge.net]
Sent: Tuesday, September 27, 2011 7:15 PM
To: Doyle, Daniel
Cc: markloper@hoanw.org
Subject: Docket number: NRC-2010-0029-PLEASE DENY COMMERCIAL NUCLEAR REACTOR AT HANFORD PROPOSAL.

Attention Daniel Doyle on behalf of DOE,

019-01 My name is Chandra Radiance and I was on the 2pm NRC call. Due to your technical problems, we lost the call and wasted alot of time waiting for the call to come back together. That is not as efficient of a way to have testimony as coming to our region like you have in the past. We NEED local in-person representation here in Hood River, OR as it is such an important issue facing the public health and safety of our Columbia River gorge! Instead we just stopped our life to be on this conference call and got to listen to 'Elevator Music' for almost an hour!

019-02 I am irate that this agenda is even on the table after Fukushima just happened 6 months ago with the same type of GE MOX reactor that was not even operating at full capacity and still the after affects will be felt for millenium to come, whether the 'experts' admit it or not!

019-03 I tried to make my comment on the phone line today, but did not get to be heard. 019-04 I am writing to say that we do not approve of operating the nuclear reactor at Hanford, WA due to the grave risks involved with radiation releases which could occur for any number of possible reasons, including and not limited to unsafe nuclear plant designs, radioactive waste still has no safe place to be stored, seismic activity, overloaded waste storage at facility which has NEVER been securely stored there or ANYWHERE EVER!

019-05 NRC regulators seem to have too close of contact with the nuclear industry itself (receiving kick backs) which allows them to look the other way when it comes to ensuring the public's welfare regarding relicensing nuclear power plants. 019-06 Furthermore, none of these plants are insured against accidents because that would be too cost prohibitive and what insurance company will even do it? yet, we are all required to have auto insurance in case of an accident. As we all know, nuclear power plants are not immune from accidents!
When there are accidents at our nuclear power plants in the future, who will be able to afford to insure it's clean-up- our bankrupt government, the fine folks from GE who brought all this good technology, no not them either, nobody will be responsible! There is no such thing as getting anything with a half life of thousands of years cleaned up anyway!

019-07 NRC has not been enforcing the safety requirements and faults in the various other nuke plants which have been inspected are not up to safe levels of functioning. NRC instead chooses to lower the "safety standards" for allowable levels of radiation. This is criminal and we urge no re-licensing therefore of ANY archaic nuclear power plants nor building any new generation ones either since there is still no safe level of radiation!

019-08 The Desperation due to Current perceived economic conditions and limitation of power production for the USA's ever increasing demand for electricity for more quick energy and a way to try to recycle nasty plutonium are not at all compelling enough reasons to discount the value for the next generations to live safely in a nuclear free Columbia River Gorge. I do NOT wish for Hanford to be the next 'Fukushima type nightmare' and we have heard geologists say that the next big earthquake is predicted to be somewhere in the Cascade region of the NW. We want our entire country to phase out of all Nuclear reactors in America! We believe these reactors add to the staggering cancer rates that are exponentially noted everywhere around them. Do not recycle nuclear waste into MOX plants and depleted uranium weapons: as a situation that affects the whole world, this should be a UN decision than a Washington state official decision. Whether it would be a UN or Congressional decision,they vote how Energy NW lobbyists tell them vote and receive monetary benefits for doing so, plus

SUNSI Review Complete
Template = ADM-013

1 E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

they are too not well educated about the extreme dangers of radioactive waste accidents. All the people voting for this are only thinking immediate economic and energy solutions, but not considering the long term costs of mitigating the damages of inevitable future problems with out-dated systems. The cost of any nuclear accident when factored into the equation would definitely make it cost prohibitive. Using highly dangerous Plutonium fuel (MOX) in any reactors is 100% unacceptable, this needs to be a public debate as it affects everyone! This should not be just a board room decision! The production and transport of Plutonium fuel is much too costly and dangerous of a security risk! This is a horrible idea because the 325 building and the high level storage facilities will not withstand the seismic activity which is probable to occur there sometime within the next 10-20,000 years!

Current disposal methods of this most toxic hazardous waste are not even adequate, minimally it needs to be in dry casks in case of fire. How in the world do any of you expect to claim this is "safe" for 24,000 years, who will be around to maintain all this mess? 019-09

In summary:

I insist that: NRC acknowledges that all human technology is fallible, yes, even Americans, and especially nuclear reactors! Even one small accident will be permanently irreversibly genetically destructive! 019-10

a) that the risks of using this fuel be disclosed in the EIS; 019-11

b) that the NRC halt consideration of relicensing until we know what was damaged, how much radiation was released, and why, at the Fukushima Reactors - which could take a year or more due to the severe damage and radiation; and, 019-12

c) Oregon's governance insist on enforcing that our health and safety considerations are addressed since we live just on the other side of the river, an arbitrary boundary when it comes to escaped radioactive particles. 019-13

In addition to failing to consider the impacts and risks of the proposal to use Plutonium fuel, the EIS fails to:

- Disclose and consider the impacts of six major safety problems which NRC staff have formally reported as unresolved as of September 2011, including how - if even possible - Energy NW will ensure that embedded pipes will not fail over the next 50 years. ("Severe Accident Mitigation Alternatives" 9-14) 019-14
- Take into account the unique - and dangerous - location of the reactor on the Hanford Nuclear Reservation. Urge the NRC to have the EIS disclose and consider the impacts if there is an explosion, fire, earthquake... releasing radiation from Hanford facilities, preventing operation at the CGS reactor or recovery from an earthquake. Hanford's High-Level Waste tanks and highly contaminated buildings, including the nearby building that ENW proposes to use for Plutonium fuel, are not built to withstand anywhere near the potential earthquake that is possible. 019-15
- Spent Fuel Pools at risk: much of Energy Northwest's fuel remains in a swimming pool above the reactor vessel - the same GE design as proved so dangerous at Fukushima. We urge removal to hardened concrete casks. 019-16
- Where will the waste go??? The NRC conveniently says it will not consider this most important and logical question, but we all need to point to the 019-17

2

hypocrisy of ignoring it, especially at Hanford. The "low level waste" from this reactor goes to the leaking, unlined commercial radioactive waste landfill in the center of Hanford (which Heart of America Northwest and the Yakama Nation are suing to try to get cleaned up). The chemical and radioactive leaks are already dangerous and projected to be high enough to cause 5% of Native American children. 019-18

In Summary, I plead with you on behalf of the human species and the Universal ONENESS of all life which I humbly represent, PLEASE DENY COMMERCIAL NUCLEAR REACTOR AT HANFORD Facility. *Do not* allow RELICENSING TO OPERATE UNTIL 2043, *or even to remain operative until* 2023 for that matter! 019-19

We urge you to PROTECT THE NORTHWEST FROM THE REACTOR USING THE SAME DANGEROUS PLUTONIUM FUEL AS FUKUSHIMA REACTOR! 019-20

Sincerely, Chandra Radiance

Gallagher, Carol

From: Wendy DiPeso [wdipeso@gmail.com]
Sent: Tuesday, September 27, 2011 7:18 PM
To: Doyle, Daniel
Subject: Today's phone session regarding Hanford

9/1/2011
76 FR 54502

(20)

Hi Daniel,

Please forward my email to the appropriate party.

020-01 I stayed on the line and listened in to each of the callers patiently waiting my turn, but apparently was never taken off of "listen only" mode so was unable to offer testimony. I wonder how many other callers had the same problem? Was there something I was supposed to do to indicate I wanted to be called upon? If so, it would have been helpful to have the directions repeated at intervals for callers signing in after 2pm.

Testimony:

020-02 Re-licensing of the Hanford reactor should be based on safety first, energy need second. 020-03 As for jobs, the Tri-Cities area would benefit from diversifying their energy resources and job dependence away from nuclear. The area is a prime location for Solar. A report coming out in November will disclose that the entire State of Washington is capable of being carbon neutral by 2030. Washington State can over time eliminate Nuclear energy from its energy portfolio.

020-04 Nuclear is neither clean nor green. I learned of the personal impacts on humans from 9 months of interviewing people all over Western Washington who had direct experience with the health effects of living near Hanford or had relatives who were down wind or along the Columbia River down stream from Hanford.

020-05 The risks of using plutonium mixed waste needs to have full disclosure in the Environmental Impact Statement. Relicensing consideration needs to be postponed until a full EIS has been completed, we know what was damaged at Fukushima and why, and until Energy Northwest has complied with the release of documents requested by Heart of America.

The issue of transporting plutonium from around the country has not been sufficiently addressed. Communities located along transportation lines have a right to participate in this debate.

020-06 Further, phone conferences in the middle of a work day is insufficient to public participation. Stake holders have a right to full disclosure of the debate going on, the risks involved with an opportunity to testify.

Thank you for taking testimony.

Wendy DiPeso
Shoreline Washington

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = S. Freeman (SZF1)
D. Doyle (did)

Gallagher, Carol

9/1/2011
76FR 54502
(21)

From: Jane Boyajian [jaboyajian@hotmail.com]
Sent: Tuesday, September 27, 2011 5:39 PM
To: Doyle, Daniel
Cc: Christine Gregoire; Patty Murray; Maria Cantwell
Subject: NRC Hearing today

Dear Daniel Doyle:

I called in and gave my password to be able to testify this afternoon at the 2 PM hearing. I heard the opening remarks. As your presentation was about to begin, I was disconnected.

Hence I am registering my remarks in this form. I hope that will be acceptable to the panel.

I am writing on my own behalf as a private citizen, now retired.
However, my lifetime work has been in the area of public policy and ethics, primarily working in or in consultation with governmental agencies.

At one time, I was retained by Batelle NW as a consultant to develop an ethical impact statement on nuclear waste management for the (then) US Energy Department, along with two other ethicists. These experiences guide the following comments.

I ask that:

the risks of MOX fuel be included in the EIS 021-01

no further action be taken until the risks of the Daiichi Fukushima event (and residual effects) is fully analyzed 021-02

until the NRC incorporates necessary new requirements you wait to take further action and that this new information made easily available to the public at large. 021-03

The Rev Dr. Jane A. Boyajian
11818 97th Lane NE #C510
Kirkland WA 98034
206 783 2535

RECEIVED
2011 SEP 27 PM 2:39
RULES AND DIRECTIVES

SUNSI Review Complete
Template = ADM-013

E-RIDS=ADM-03
Add= D. Doyle (dld)
S. Freeman (SXF1)

9/1/2011
76FR 54502

22

Hello Mr. Doyle,

022-01

Unfortunately, your facilitator assumed that since I had asked a question, I had already commented, so I was eliminated from the list of telephone commenters. After that, the phone line was open so I could hear you, but you could not hear people on the phone lines. And it was downhill all the way. This is a poor way to run a public meeting. If you cannot even manage technology to get a phone connection, then the NRC will have to just spend the time and money to have public meetings in several locations in the Columbia Generating Station's area, including downstream locations, Portland OR and Vancouver WA. I waited through 2.5 hours of bad connections with echoing feedback, to finally be cut out arbitrarily and then technologically. It appears that the NRC does not really want to have to deal with our comments or input into this process. Is that correct?

I am a very concerned member of the public.

Theodora Tsongas, PhD, MS

Portland Oregon

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

9/1/2011 76FR 54502 (23)

RULES AND DIRECTIVES BRANCH

Gallagher, Carol

2011 SEP 29 PM 2:46

From: Sola' & Inayat [oneness@gorge.net]
Sent: Tuesday, September 27, 2011 7:21 PM
To: Doyle, Daniel
Cc: markloper@hoanw.org; gerry@hoanw.org
Subject: Testimony- EIS/hanford relicensing

RECEIVED

Dear Daniel

Thanks for the opportunity for public testimony and comment on the potential relicensing of Hanford nuclear power station.

023-01
Unfortunately, the call in line is having difficulties, so I am writing comments as I sit here on hold. Given the unreliability of the phone in technology, perhaps it would be better to do local meetings as have been held before in Hood River. Even at the last Hood River meeting there was inadequate time to hear all comments and adequately address all questions. The public input appears to be getting marginalized. I assume the powers that be may not want to hear objections to their plans and the corporate sponsors profiting from Hanford and nuclear power would rather just get on with their plans and maximize shareholder dividends rather than waste time talking to individuals.

023-02
Anyway, given this email venue, I state that Hanford should not be relicensed. I did not participate in its construction as did the VIP who was allowed to cut in line before the presentation period.
Whatever his qualifications and however positive his regard is of the plant, it does not override physics, the inevitability of human error and extreme natural events. Similarly confident individuals built Fukushima, Chernobyl, 3 Mile Island, as well as the Challenger, Apollo 13, the Tacoma Narrows bridge, dropped conference calls and any number of failed engineering endeavors. It is noble to strive to overcome failure but it is foolish to believe it can be eliminated. Disaster
will continue to happen and no one can predict how or when or what.
There will continue to be deaths and damage as the shadow side of our technological progress. However, this inevitability is not an excuse for corporate/ governmental denial of responsibility. The clear dangers of radioactive contamination following nuclear power plant failures is demonstrated by "dead zones" around Chernobyl and Fukushima. "Safe" and "clean" power plants do not explode and make large areas uninhabitable for centuries. Boiling water with toxic radioactivity is not a reasonable or responsible choice given the risks of catastrophic failure, which is inevitable somewhere, sometime.

023-03
I also take issue with the claim that nuclear power is economical.
This view does not take into account the decommissioning costs of obsolete plants, clean up of catastrophic disasters, as well as the still unresolved waste disposal issue. It seems to me that the EIS should include these inevitable long term costs. Note Trojans economic debacle. certainly there were political harrasment factors, but the failed steam reactor alone would have been sufficient to shut it down.
Trojan was a big win for PGE and a major loss for the ratepayers. Add up the whole mess and how much did we pay per kilowatt?

023-04
I also take issue with the belief that nuclear power is "green".
Certainly it is "carbon-free". It is also "calorie-free". This superficial green-ness masks the black-ness of high-level radioactive waste both as part of the as designed fuel cycle and the possibility of accidental or catastrophic releases. Certainly nuclear power can be construed to be superior to coal or wind or solar by comparing certain statistics. This does not make nuclear clean. The major advantage nuclear does have is a powerful political lobby and corporate cabal to spin the media and legislation in favor of it's continued profits. Solar and other technologies are lagging behind nuclear in their ability to provide adequate electricity because research and development funds were slashed when Reagan took the solar panels off the white house in 1980. The big picture is that we need to catch up and phase over to less toxic and dangerous forms of power generation, not put all our eggs in the nuclear basket and arrogantly believe that a Fukushima or Chernobyl "can't happen here."

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SUNSI)

1

I am concerned about reports of NRC weakening safety standards in order to "safely" relicense nuclear power plants. This is making nuclear power less expensive in the short term, and increasing the likelihood of accidents in the long term. 023-05

Hanford has provide employment and safety to the community. It is to be praised for that blessing to the community. However, it does not insure Hanford will never have an error. 023-06

I

Blessings
Hafiz Heartsun
3226 Dee Hwy
Hood River, Or.97031
541-354-3633

9/1/2011
76FR54502
24

PUBLIC SUBMISSION

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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0032
Comment on FR Doc # 2011-22415

Submitter Information

Name: Lonn Holman
Address:
64 Meadow Ridge Ln
Port Angeles, WA, 98362

General Comment

024-01

Considering that Hanford has never been cleaned up, there are hazardous chemicals presently leeching into the ground water ans Columbia River which empties into the Pacific Ocean --- and considering all the horrible Nuclear Plant accidents of the past all over the world and the futileness of peoples actions to try to react to these accidents--- it seems insane to me that people would even consider renewing Nuclear Plant licenses for the future. Money will drive Humanity to ultimately destroy this rare life giving planet. By the time people realize money is useless without LIFE, it will be too late. Pleeeaaase wake up!

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

9/1/2011
76FR54502

RULES AND DIRECTIVES BRANCH

9: 28

PUBLIC SUBMISSION

25

RECEIVED

As of: October 03, 2011
Received: September 30, 2011
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Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0033
Comment on FR Doc # 2011-22415

Submitter Information

Name: martin mijal

General Comment

I am upset about the elimination of transparency & democratic process where you are 1) sneaking in the continuation of operating the Hanford reactor despite government's orders to shut it down; and, 2) switching to Plutonium fuel. This is the most toxic radiation that exists. There is NO need to use this to generate electricity. The ONLY use is to make MORE Weapons of Mass Destruction. THIS IS TOTALLY UNACCEPTABLE. It's true our WMD are aging & there are now better technologies to do nuclear WMD. However take apart the "obsolete" (albeit extremely destructive) old weapons & recycle the Plutonium. (The BEST is to not make nuke WMD at all.) Nuclear Power plants are INHERENTLY UNSAFE. We are told that Capitalism = Freedom + Democracy. The private insurance companies will NOT insure ANY nuke plant. The immense liability is too much. E.g.: Fukushima might have generated 1$ billion in electricity. It's meltdown could easily cost 1$billion x 1$billion: 1$ thousand-trillion to repair. High radiation has been found in Toronto, Canada. Since private capitalistic insurance companies refuse to insure nukes, the fed government gives corporate welfare to these nukes by "insuring" them. Thi is another gross unfunded liability that the Tea Party is trying to eliminate. ALL nuke plants should be shutg down if they cant get private capitalistic (= Freedom) insurance!!!! The private insurance companies have no problem insuring coal or natural-gas burning power plants . Changing the fuel at the Hanford reactor was so buried as to be unfindable. Why are you afraid of this info? Why no transparency? What are you afraid of if this is such a bright idea? Why no public meetings to tell us how the nuclear geniuses think this is a great idea? I am disappointed and angry that you are running your job this way. I feel BETRAYED. You have a serious job that not done well has the potential to make the planet uninhabitable. Oh, I guess the cockroaches came back first to the South

025-01
025-02
025-03
025-04

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

9/1/2011
76 FR 54502

26

PUBLIC SUBMISSION

As of: October 03, 2011
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Docket: NRC-2010-0029
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Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0034
Comment on FR Doc # 2011-22415

Submitter Information

Name: Kathleen Wahl
Address:
818 -19th Ave
Seattle, WA, 98122

General Comment

After the catastropic events at Fukushima, Japan, any plans 026-01
for license renewal of this Station should be scrapped. The contemplated fuel is untenable and the safety of the 026-02
people
of this state and nation must be primary.

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SXF1)

9/1/2011
76FR54502
(27)

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Received: October 01, 2011
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Tracking No. 80f4993e
Comments Due: November 16, 2011
Submission Type: Web

Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0035
Comment on FR Doc # 2011-22415

Submitter Information

Name: Carol Hiltner
Address:
12345 Lake City Way NE #121
Seattle, WA, 98125

General Comment

027-01

ABSOLUTELY DO NOT RENEW THE LICENSE AND DO NOT ALLOW MOX FUEL. It is a death wish for the planet. Certainly you are not oblivious to the radioactivity that has been released by these abominations! It is your family that gets cancer too!!!
PLEASE come to your senses!!

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)

STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

1300 S. Evergreen Park Dr. S.W., PO Box 43172 • Olympia, Washington 98504-3172

September 27, 2011

Cindy Bladey, Chief
Rules, Announcements and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop: TWB 05-B01M
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Columbia Generating Station Draft Supplement to the Generic Environmental Impact Statement

Dear Ms. Bladey:

As Chairman of the Washington State Energy Facility Site Evaluation Council (EFSEC), I want to thank you for the opportunity to comment on the Draft Supplement to the Generic Environmental Impact Statement (GEIS), for the renewal of the Columbia Generating Station (CGS) operating license. My understanding is that the U.S. Nuclear Regulatory Commission (NRC) is seeking comments on the CGS GEIS as part of its environmental review in evaluating the impacts of extending the plant's operating license for an additional twenty years until 2043.

In a previous letter dated April 6, 2010 to your office I provided specific information concerning EFSEC regulatory oversight of CGS. EFSEC staff are currently conducting a review of the GEIS and I expect we will submit formal comments before the comment period closes on November 16, 2011.

EFSEC acknowledges that CGS is an integral part of the region's power system; a license extension will ensure that the power from CGS is available to future generations. 028-01

Thank you for the opportunity to participate in this process.

Sincerely,

James O. Luce
EFSEC Chair

cc. Mark Reddemann, Energy Northwest

LAMPSON INTERNATIONAL LLC

September 26, 2011

9/1/2011
76 FR 54502
(29)

Cindy Bradley, Chief
Rules, Announcements & Directives Branch (RADB)
Division of Administrative Services
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington DC 20555-0001

I am writing on behalf of Lampson International LLC, our family owned business of 65 years. Lampson International is headquartered in Kennewick WA and employs approximately 250 people in the Southeast Washington communities. Lampson International is a manufacturer of very specialized heavy lift and heavy transport equipment, as well as a heavy rigging contractor. Lampson is headquartered in the Pacific Northwest, serving all types of industrial, petro-chemical, mining, utility operators and the general construction industries. Obviously, we rely very heavily on low cost, efficient electrical power to be able to economically provide our services.

The Columbia Generating Station has been and continues to be one of the most reliable and cost effective sources of power in the Pacific Northwest. It is imperative to the viability of our organization to continue to have access to electrical power provided by Energy Northwest via their Columbia Generating Station. 029-01

Lampson International LLC has performed heavy lift rigging and transportation services for Energy Northwest for many years. Because of this close working relationship, I personally know of the excellent safety record of their organization. I also am cognizant of their superior environmental record, the fact that they employ some 1,100 highly skilled workforce in the Southeastern Washington region and the fact that they create more than $440 million in economic activity. For the sake of this region's businesses and families such as ours it is vitally important that they be allowed to continue in operation for at least an additional 20 years, through 2043. 029-02

I sincerely request your strong consideration of their application for extension of their license. If you have any questions, please feel free to contact me directly at any time. Thank you very much for your kind consideration.

Sincerely,

William N. Lampson
President

SUNSI Review Complete
Template = ADM-013

ERDS = ADM-03
Add = D. Doyle (dld)
S. Freeman (SZF1)

607 E. COLUMBIA DR. • P.O. BOX 6510 • KENNEWICK, WA 99336 • (509) 586-0411 • FAX (509) 586-0825
WSCL #LAMPSIL000RQ

9/1/2011
76FR 54502

PUBLIC SUBMISSION

30

As of: October 04, 2011
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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0036
Comment on FR Doc # 2011-22415

Submitter Information

Name: Holly Graham
Address:
5900 Brenner Road NW
Olympia, WA, 98502-1535
Organization: self

General Comment

030-1 Instead of phasing out old and unreliable reactors, Energy NW is asking secretly to use the same experimental Plutonium fuel in Hanford as the Fukushima Reactor #3 om Japan to keep this unsafe form of power alive.

The EIS on re-licensing the plant ignores this. The risks of using this fuel must be disclosed to the cities involved.

030-2 Further, there is serious doubt that this reactor should be recommissioned at all. It's on an earthquake site, surrounded by already poisonous nuclear waste from all the years of use at Hanford, and where will the new waste go, since the old waste has not been cleaned up? We shut Hanford down in the '80s because we were over and done with the hideous effects on the earth and the people in the downwind pattern over Washington, Idaho and Oregon.

030-3 We own this reactor. The public has a right to say no to recommissioning this reactor, and to demand conservatio and renewable energy in the place of nuclear power, which has done nothing but bring birth defects, future ruin, earth despoiling, water quality loss, and crop damage to every place in which it has reared its ugly, obsolete head.

030-4 I want you to stop this fuel, and stop this reactor. 030-5

SUNSI Review Complete
Template=ADM-013

E-RIDS=ADM-03
Cord=D. Doyle (dld)
S. Freeman (SZF1)

PUBLIC SUBMISSION

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Docket: NRC-2010-0029
Notice of Receipt and Availability of Application for Renewal of Columbia Generating Station Facility Operating License

Comment On: NRC-2010-0029-0015
Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0037
Comment on FR Doc # 2011-22415

31

9/1/2011
76FR54502

Submitter Information

General Comment

031-01

I was watching a tv show talking about the various risks, both in the past, presently, and into the future associated with the nuclear facility in the Hanford area and would like submit my request that the Columbia Generating Station NOT have its license renewed. It appears that not only are there inherent risks in the operation of nuclear plants generally due to possible defects in the components, human error, etc., but the proximity of this particular station to a Seismic Fault Zone highly increases those risks (the Japan earthquake should make us very sensitive to this situation). Also, 60 years seems to be 'pushing' the safety capability quite a bit - I had heard, years ago, that nuclear plants were built for about a 25-year life.

031-02

SUNSI Review Complete
Template = ADM-013

E-RIDS=ADM-03
Add = D. Doyle (did)
S. Freeman (SZF4)

9/1/2011
76FR54502

32

Scott McDonald
2DC Waldron St. Apt 31
Richland, WA. 99354
509-308-6254

Non-WDOH comments:

- Page 2-21, Lines 36040. Paragraph states that a component of the environmental monitoring program's water quality monitoring program was discontinued in 1995 after "years of data showed no discernable changes in river water quality..". Since no information is given for when that part of the program began, there is no way for the public or the decision maker to quantify the study. 032-01
- Page 2-26, Lines 6-11. Paragraph states that there is a limited number of groundwater-supply wells that provide drinking water. The paragraph lists three wells at FFTF, one well at the Hanford Patrol Training Center, and one at the Yakima Barricade. However, LIGO takes drinking water from a well. This should be listed also. 032-02
- Page 2-27, Line 14. Sentence states that the Columbia River crosses the west of the CGS site. The Columbia River is actually to the east of the site. 032-03
- General comment. The shrub-steppe ecosystem is prone to fire. In June of 2000, a fire burned over 200,000 acres of Hanford and neighboring property. Several other fires have been in the 10,000 to 100,000 acre range. There should be a discussion of fire risk in the EIS. 032-04
- Page 2-71, Line 20. Should be spelled "McChord". 032-05
- Page 2-17, Line 21. Should be "Yakima Training Center". Please note that the county and city are spelled Y-A-K-I-M-A. The Native American tribe is spelled Y-A-K-A-M-A. 032-06
- General Comment. In the cumulative impacts, there is no mention of the Pomona Heights to Vantage 230 kV line to be constructed by PacifiCorp starting in 2012. BLM is doing the EIS with Yakima Training Center as a cooperating agency. 032-07

SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (Szf 1)

Eastern Washington Section - American Nuclear Society
P.O. Box 784 • Richland, WA 99352-0941 • ans-ews.org

9/1/2011
76FR54502

September 27, 2011

33

RECEIVED
2011 SEP -4 PM 4:46
RULES AND DIRECTIVES
BRANCH

Nuclear Regulatory Commission
Public Hearing, Richland Washington

Re: Renewal of Operating License for Energy Northwest's Columbia Generating Station

033-01

The Nuclear Regulatory Commission is chartered with overseeing the technical and operational safety of US nuclear power units. This agency is respected worldwide for its work in ensuring safe designs and operation. The Columbia Generating Station of Energy Northwest is an example of those efforts resulting in sustainable, reliable, dispatchable, and economical electrical energy for regional customers.

033-02

Renewing the operating license is supported by the Eastern Washington Section of the American Nuclear Society. This essential resource ensures that the region continues an abundance of base load electrical energy.

033-03

Lack of renewal would require replacement with higher cost energy sources including a mix of carbon fuel supplies which is currently unnecessary.

033-04

With reliability and capacity factors for scheduled operation approaching 100%, the Columbia Generating Station is our region's best supplement to hydropower.

Therefore, we fully endorse renewal of the operating license for Columbia Generating Station

Sincerely

Gary L. Troyer
Chairman – ANS-EWS

SUNSI Review Complete

E-RIDS= ADM-03
Add=

Actions and expressions above are those of the Eastern Washington Section of the American Nuclear Society and do not reflect the expressions of the Society as a whole.

Template = ADM-013

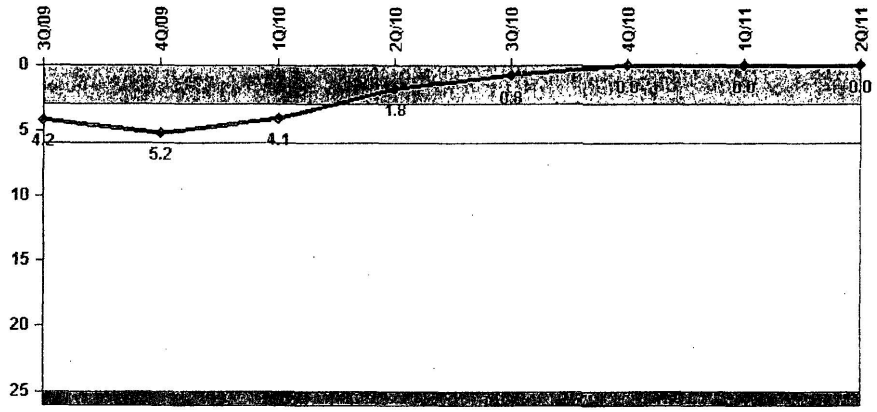
D. Doyle (did)
S. Freeman (5 of 1)

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Columbia Generating Station
2Q/2011 Performance Indicators

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

Unplanned Scrams per 7000 Critical Hrs	3Q/09	4Q/09	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11
Unplanned scrams	1.0	1.0	0	0	0	0	0	0
Critical hours	1518.6	2059.7	2159.0	2184.0	2208.0	2209.0	2159.0	40.6
Indicator value	**4.2**	**5.2**	**4.1**	**1.8**	**0.8**	**0**	**0**	**0**

Licensee Comments: none

9/1/2011
76 FR 54502
34

TRI-CITY
REGIONAL CHAMBER OF COMMERCE
W·A·S·H·I·N·G·T·O·N

RECEIVED
2011 OCT -4 PM 4:46
RULES AND DIRECTIVES BRANCH

September 27, 2011

Cindy Bladey, Chief
RADB, Division of Administrative Services
Office of Administration
Mail Stop: TWB-05-B01M
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Bladey,

034-01

It is with great honor to send this letter of support of Energy Northwest from the Tri-City Regional Chamber of Commerce for their license renewal application for Columbia Generating Station with the Nuclear Regulatory Commission.

The Columbia Generating Station and Energy Northwest has been a vital part of the region's energy mix and has consistently provided vast amounts of clean and affordable power to homes and businesses across the Northwest.

Washington State and the Tri-Cities Region enjoy some of the lowest electrical utility rates in the United States because of the federal hydroelectric system and the Columbia Generating Station. Economic recovery will require continued support for these reliable, clean, and low-cost baseload power sources. Renewal of this operating license is vital to meeting the region's electricity needs. It will help ensure a reasonable cost of power for households and businesses to drive a strong economy.

Energy Northwest shows us their commitment to the region by their activities in the community and associations like ours. They are an integral part of our area and deserve license renewal so they can continue to offer us clean and affordable energy.

On behalf of the Tri-City Regional Chamber of Commerce and its Board of Directors, we support your efforts to secure license renewal for the Columbia Generating Station with the Nuclear Regulatory Commission.

Sincerely,

Colin Hastings
Vice President
Tri-City Regional Chamber of Commerce

ERIDS = ADM-03
Add =

7130 West Grandridge Blvd., Suite C • Tri-Cities, WA 99336
e-mail: info@tricityregionalchamber.com •tel (509) 736-0510 •fax (509) 783-1733 •www.tricityregionalchamber.com

SUNSI Review Complete
Template = ADM-013

K. Doyle (dfd)
S. Freeman (SZF1)

9/1/2011
76FR54502
(35)

AWB Association of Washington Business
Washington State's Chamber of Commerce

September 28, 2011

Michael T. Lesar
Chief, Rulemaking and Directives Branch
Office of Administration
Mailstop TWB 05-B01M
U. S. Regulatory Commission
Washington, D.C. 20555-0001

RECEIVED
2011 OCT -5 PM 2:24
RULES AND DIRECTIVES BRANCH

Dear Mr. Lesar:

035-01

We strongly support Energy Northwest's license renewal for Columbia Generating Station nuclear power plant which extends the operating license through 2043.

For more than 25 years, Columbia has provided valuable electricity to the region and assisted in economic stability to the state by providing clean, affordable energy to more than a million Washington residents.

As energy demand increases and climate change becomes a significant public policy issue, a diverse mix of clean energy resources will be critical to meet increasing electricity needs. For these reasons, it is imperative to maintain the vast quantity of carbon-free and baseload power Columbia Generating Station provides.

We fully support Columbia receiving the 20-year license renewal from the Nuclear Regulatory Commission and encourage our 7,600 members and others to voice their support enabling the region to continue benefiting from this clean, affordable electricity.

Sincerely,

Don C. Brunell
President

ASSOCIATION OF WASHINGTON BUSINESS
Membership Government Affairs Member Services AWB Institute

T 360.943.1600 PO Box 658, Olympia, WA 98507-0658
T 800.521.9325 1414 Cherry St. SE, Olympia
F 360.943.5811 www.awb.org

E-RIDS = ADM-03
Add = D. Doyle (dtd)
S. Freeman (5 of 7)

SUNSI Review Complete
Template = ADM-013

STATE REPRESENTATIVE
31st DISTRICT
CATHY DAHLQUIST

State of
Washington
House of
Representatives

EDUCATION
EDUCATION APPROPRIATION
& OVERSIGHT
TECHNOLOGY, ENERGY
& COMMUNICATIONS

September 23, 2011

9/1/2011
76FR54502
(36)

Cindy Bladey
Chief, Rules, Announcements and Directives Branch
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Support for License Renewal of the Columbia Generating Station Operated by Energy Northwest

036-01

I regret I am not able to attend the September 27th public meeting on the Columbia Generating Station's (Columbia) license renewal application, but I write in strong support of Columbia's license renewal application. This facility serves an important role in electricity generation for my constituents and the state of Washington. I urge the Nuclear Regulatory Commission to approve the license renewal application.

The Columbia Generating Station, although located more than 200 miles from my legislative district, is an integral part of our state's electricity generation representing over 8 percent of our state's total generation capacity and providing electricity for more than one million homes. Columbia's generation also contributes to our regional economic competitiveness by keeping electricity rates at a reasonable level, an important component to help attract new employers.

In a state with an unemployment rate of 9.3 percent, Columbia is also a strong economic engine that employs more than 1,100 people and creating more than $440 million in economic activity. Renewing the license application will ensure the continued presence of these highly-skilled, family-wage jobs that are vital to our state economy.

036-02

Columbia serves as a key component in our state's increasing use of intermittent renewable energy sources such as wind and solar power. With limited opportunities to expand our hydroelectric system, Columbia's generation provides much needed firming power to maintain stability on our regional electric grid as the use of intermittent renewable energy sources increases.

Thank you for your consideration of my comments and again, I urge the Commission to approve Columbia's license renewal application.

Regards,

Cathy

LEGISLATIVE OFFICE: PO BOX 40600, OLYMPIA, WA 98504-0600 • 360-786-7846
E-MAIL: Cathy.Dahlquist@leg.wa.gov
TOLL-FREE LEGISLATIVE HOTLINE: 1-800-562-6000 • TDD: 1-800-635-9993

E-RIDS = ADM-03

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Add = D. Dayle (did)
S. Freeman (SZF1)

PUBLIC SUBMISSION

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Energy Northwest, Columbia Generating Station; Notice of Availability of Draft Supplement 47 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meetings for the License Renewal of Columbia Generating Station

Document: NRC-2010-0029-DRAFT-0038
Comment on FR Doc # 2011-22415

9/1/2011
76 FR 54502

Submitter Information

38

Name: Linda
Submitter's Representative: Representative Jay Inslee

General Comment

038-01

I am alarmed and disappointed with the NRC's current program of relicensing old reactors. It is my understanding that there is not even adequate inspection of the state of these aging reactors, let alone an adequate maintenance program once the reactors have be relicensed. Really? No plan for how to manage an aging reactor? No Safety Program? What a recipe for disaster! In the case of Hanford, large scale leaks are already occurring with little to no mitigation. Truthfully, it is time to consider decommissioning these reactors, not extending their already dangerous existence.

Thank you

SUNSI Review Complete
Template = ADM-013

ERIDS = ADM-03
Add = D. Doyle (did)
S. Freeman (SZF1)