UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

LBP-09-25

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Michael M. Gibson, Chairman
Dr. Gary S. Arnold
Dr. Randall J. Charbeneau

In the Matter of SOUTH TEXAS PROJECT NUCLEAR OPERATING CO. (South Texas Project Units 3 and 4)	Docket Nos. 52-012-COL & 52-013-COL ASLBP No. 09-885-08-COL-BD01 September 29, 2009

MEMORANDUM AND ORDER
(Ruling on Admissibility of Contentions 8-16)

On August 27, 2009, this Board issued a Memorandum and Order[1] [hereinafter August 27, 2009 Order] ruling on the standing of three petitioners and the admissibility of nineteen of their twenty-eight proffered contentions. In that August 27, 2009 Order we also described the background of this proceeding and the standards that govern the admissibility of contentions. We ruled that all three petitioners had standing, that eighteen of their contentions were inadmissible, that one contention (Contention 21) was admissible, and that Petitioners would be admitted as parties to this contested proceeding.

Having addressed Contentions 1-7 and 17-28 in our August 27, 2009 Order, we now address Contentions 8-16. For the reasons set forth below, we conclude that among the remaining nine contentions, Petitioners have proffered four admissible contentions, specifically Contentions 8, 9, 14, and 16, as well as Contention 21, which was admitted by our August 27, 2009 Order, and that Petitioners may litigate these contentions in this proceeding.

[1] Licensing Board Order (Ruling on Standing and Admissibility of Certain Contentions), LBP-09-21, 70 NRC __ (slip op.) (Aug. 27, 2009).

I. Analysis and Rulings on the Admissibility of Contentions

1. Contention 8

Petitioners state in Contention 8:

> The COLA is inadequate because it fails to analyze fully the radiological hazards that will occur from operation of the STP Units 3 and 4 nuclear plants based on discharge of water that contains radioactive particulates to the Main Cooling Reservoir (MCR).[2]

Contention 8 encompasses a wide range of topics related to alleged radioactive hazards associated with the planned operation of STP Units 3 and 4. First, Petitioners characterize the MCR as an unlicensed radioactive waste disposal facility that, upon receiving effluent from STP Units 3 and 4, would cause the uncontrolled release of radioactive material.[3] Petitioners claim one of Applicant's own reports[4] establishes that (1) "the MCR is contaminated by plant wastes that, at a minimum, include tritium and cobalt-58 and cobalt-60;" (2) "most years the tritium radioactivity in surface water exceeds 10,000 pCi/KG;" and (3) "[t]ritium is a pernicious problem for STP" based on current monitoring for tritium discharges into the MCR from STP Units 1 and 2.[5] Petitioners also claim the ER indicates that tritium has been detected in surface water, the MCR pressure relief wells, and the "shallow aquifer groundwater beneath and around the plants."[6] One of Petitioners' experts, Arjun Makhijani, Ph.D., has asserted that there are health concerns related to tritium exposure.[7]

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[2] See Petition for Intervention and Request for Hearing (Apr. 21, 2009) at 32 [hereinafter Petition].
[3] Id. at 33.
[4] At various locations in their petition, Petitioners refer to this 2007 Annual Environmental Operating Report as the "STP 2007 Environmental Operating Report," the "2007 STPNOC Radiological Operating Report" and the "2007 STP Radiological Environmental Operating Report." The precise name of this report appears to be "STP 2007 Annual Operating Report for STP Units 1 and 2."
[5] Petition at 32 (citing STP 2007 Annual Operating Report for STP Units 1 and 2 at 6-7, 6-8, Figure 6-9).
[6] Id. at 32-33 (citing ER p. 2.3.3-2 and 2.3.3-4).
[7] Petition at 32 (citing Arjun Makhijani et. al., Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and its Health Effects (1995) at 97).

Additionally, Petitioners express concern that solids containing radioactive isotopes, including cobalt-58 and cobalt-60, have been detected in the MCR sediment. In support of this contention, Petitioners offer the opinion of another expert, George Rice [hereinafter Rice Report], who claims that "[t]ritium contaminated groundwater could also migrate with off-site radiological consequences."[8] Petitioners also contend that, although operation of STP Units 3 and 4 will increase the levels of particulate radioactive contaminants in the MCR, the COLA allegedly does not address the potential for release of radioactive material from the MCR.[9]

Petitioners further maintain that a possible embankment failure could produce adverse impacts downstream of the MCR:

> There is no discussion in the [ER] of any contingencies for embankment failure or the environmental and public health consequences if radioactive laden sediment is transported downstream as a result. The embankment that forms the MCR is a man-made structure that presumably has a useful life. However, while the Applicant acknowledges the radiological impact of the deposition of tritium and radioactive particulate matter in the MCR, there is no attempt to analyze the environmental or public health impacts of this circumstance.[10]

Petitioners contend that a failure of the embankment would immediately release radioactive sediment and water to the downstream environment, and that the ER does not discuss consequent mortality and morbidity impacts.[11]

Finally, Petitioners state that Applicant mistakenly assumes the MCR will always have an adequate inflow of water.[12] If inadequate inflow were to occur, Petitioners assert there could be several significant negative impacts.[13] These alleged adverse impacts of low inflow include: (1) inadequate dilution of tritium sufficient to avoid "excessive tritium levels";[14] and (2) the MCR

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[8] Petition at 33 (citing Declaration by George Rice, Groundwater Hydrologist, Potential for Groundwater Contamination at the South Texas Project Nuclear Power Plant (Apr. 21, 2009)).
[9] Petition at 32-33.
[10] Id. at 34.
[11] Id.
[12] Id.
[13] Id.
[14] Id. at 35.

sediment could become dried and the resulting particulate radioactive material could become windborne and pose a radiological hazard to downwind populations.[15]

Applicant opposes admission of this contention on the ground that Petitioners' claims "lack adequate factual, documentary, and expert support,[16] and fail to establish the existence of a genuine dispute on a material issue of law or fact, contrary to 10 C.F.R. § 2.309(f)(1)(v) and (vi)."[17] Applicant also disputes Petitioners' claim that the MCR is an unlicensed radioactive waste disposal facility, and claims Petitioners are wrong as a matter of law.[18] Applicant also claims the ER asserts that STP Units 3 and 4 will comply with the limits for "liquid radioactive effluents" in NRC regulations.[19] Applicant further maintains that Petitioners fail to dispute ER Section 6.2.6, which specifically discusses Applicant's tritium monitoring and concludes that the "average annual tritium concentrations observed in the MCR" are within the NRC, EPA, and State of Texas limits.[20]

Applicant argues that Petitioners' quote from the STP 2007 Annual Environmental Operating Report for STP Units 1 and 2 does not support Petitioners' claim regarding cobalt-58

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[15] Id. at 34.

[16] In this regard, Applicant makes the same strained interpretation of NRC's pleading rules that NRC Staff made. See August 27, 2009 Order at 71 n. 94. As we noted there, the NRC's pleading rules require merely that a petitioner provide a simple nexus between the contention and the referenced factual or legal support. See 10 C.F.R. § 2.309(f)(1)(v). They require nothing more.

[17] See [STP's] Answer Opposing Petition for Intervention and Request for Hearing (May 18, 2009) at 32 [hereinafter STP Answer].

[18] STP Answer at 33.

[19] Id. Applicant provides a detailed summary of its monitoring program with respect to STP Units 3 and 4. Applicant explains:

> The Liquid Waste Management System (LWMS) for STP Units 3 and 4 is designed to ensure that potentially radioactive liquids are not discharged to the environment unless they have first been monitored and confirmed to be within acceptable limits. Applicant uses a Radiological Environmental Monitoring Program (REMP) to ensure that the plant is operated within its design parameters and that offsite doses are as low as reasonably achievable. The REMP also ensures that radioactive materials that are released from the plant do not re-concentrate in the environment and are as modeled in the Off-site Dose Calculation Manual (ODCM).

Id. at 33 (internal citations omitted).

[20] STP Answer at 34.

and cobalt-60 in MCR sediment.[21] Instead, Applicant asserts that this quoted language was taken out of context and that the complete quote[22] does not support Petitioners' assertion. To the contrary, Applicant maintains that most samples have yielded results that are below the level of detection for cobalt-58 and cobalt-60.

Applicant maintains that "Petitioners have offered no support for their allegations that the MCR embankment could fail, that the MCR could dry up, or that groundwater beneath the MCR may become contaminated."[23] Concerning the alleged potential failure of the MCR embankment, Applicant refers to Section 2.4S4.1.2 of the Final Safety Analysis Report (FSAR) in support of its assertion that failure of the MCR embankment is not a credible event.[24] Applicant further objects to this contention on the ground that Petitioners have failed to provide any alleged facts or expert opinion that "either wind-blown or water-borne sediment would pose a significant environmental impact that needs to be discussed in the ER."[25]

NRC Staff also opposes admission of this contention because "it lacks adequate factual or expert support and fails to demonstrate the existence of a genuine dispute with the applicant on a material issue of law or fact."[26] NRC Staff claims that Petitioners, in citing to the Rice Report for the assertion that tritium-contaminated groundwater will migrate, fail to dispute Applicant's compliance with regulatory dose limits.[27] In this regard, NRC Staff notes that the

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[21] Id. at 34-35.
[22] Id. at 34-35 (citing to pages 6-7 and 6-8 of the 2007 Annual Environmental Operating Report for STP Units 1 and 2:

> Bottom sediment samples are taken from the Main Cooling Reservoir each year. Figure 6-6 shows the positive results from two plant-produced radioactive materials, Cobalt-58 and Cobalt-60. The Cobalt-58 and Cobalt-60 inventory in the reservoir has decreased since 1992 because of equipment installed to reduce radioactive effluents. The amount of Cobalt-58 has decreased below levels that can be reliably detected. The concentration of Cobalt-60 in the reservoir bottom sediment samples varies and this year could not be detected.).

[23] STP Answer at 38.
[24] Id. at 37.
[25] Id. at 38.
[26] NRC Staff's Answer to Petition for Intervention and Request for Hearing (May 18, 2009) at 37 [hereinafter Staff Answer].
[27] Id.

"concentration of tritium alleged by the Petitioners to be present in the MCR is well below the regulatory limits found in 10 C.F.R. §§ 20.1301 and 20.1302."[28] NRC Staff also claims that 42 U.S.C. § 2021b, referenced by Petitioners, "addresses disposal of low-level radioactive wastes, not control of liquid effluent releases" and further disputes that the MCR is a disposal facility requiring a license.[29] NRC Staff disputes Petitioners' assertion that radioactive material could be released from the MCR either by embankment failure or by dry lake bed conditions, arguing the "likelihood and consequences posed by Petitioners are not adequately supported by facts or expert opinion."[30]

The Board concludes this contention is admissible in part and inadmissible in part. It is inadmissible insofar as Petitioners assert safety claims, but admissible insofar as Petitioners assert environmental claims. With respect to Petitioners' safety claims, Petitioners have neither alleged how the COLA fails to include specific safety-related information that NRC regulations require, nor alleged that the COLA fails to meet a relevant NRC safety standard.[31] Accordingly, we conclude that these claims are inadmissible under 10 C.F.R. § 2.309(f)(1)(iv). Petitioners have failed to demonstrate that these issues are material to the findings the NRC must make with respect to the safety of STP Units 3 and 4.

With respect to Petitioners' environmental claims, Petitioners have alleged that Applicant has failed to address the environmental impacts associated with an increase of radionuclides in the MCR attributable to the operation of STP Units 3 and 4.[32] FSAR Table 12.2-22 lists likely releases of radioactive isotopes from STP Units 3 and 4, which suggests it is likely that concentrations of radionuclides in the MCR will increase. Although discharges are to be

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[28] Id. at 37 n.20.
[29] Id. at 38.
[30] Id.
[31] Moreover, Applicant has provided numerous references to licensing documents demonstrating that radionuclides in the MCR will be controlled and monitored to ensure they will remain below applicable NRC safety levels. See, e.g., Tr. at 122 (stating that Table 12.2-22 "identifies the annual release in curies per year and the concentration of that release" for each isotope.).
[32] Petition at 34.

controlled and the MCR is to be monitored to control concentrations of radionuclides, Petitioners allege that the ER fails to identify the potential environmental impacts of increased radionuclides in the MCR. Petitioners have identified these possible environmental impacts to include: increased concentrations of radionuclides in the sediment of the MCR,[33] in the shallow groundwater adjacent to the MCR, [34] in the watercourse that receives discharges from the MCR, the Colorado River,[35] and in the MCR itself.[36]

As narrowed,[37] this contention is both within scope and addresses a material issue that Applicant must address in its ER. Accordingly, the Board concludes this part of the contention is admissible, and will be admitted in the narrowed form

> The Environmental Report fails to analyze the environmental impacts associated with the increase in radionuclide concentration in the MCR due to operation of STP Units 3 & 4.

2. Contention 9

Petitioners state in Contention 9:

> Increasing Levels of Groundwater Tritium. The Environmental Report fails to predict or evaluate the effects of increasing groundwater tritium concentrations.[38]

In support of their claim that levels of tritium are increasing in groundwater under or adjacent to the STP site, Petitioners refer to the opinion of one of their experts, D. Lauren Ross, P.E., Ph.D. [hereinafter Ross Report], who interprets data from the ER, Table 2.3.3-6.[39] Noting that tritium emits low-energy beta radiation and that the EPA drinking water limit is 20,000 picocuries per liter, Dr. Ross asserts that "[t]rituim has been detected in two of the pressure

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[33] Id. at 33-34.
[34] Id. at 34.
[35] Id. at 35.
[36] Id. at 32, 34.
[37] Calvert Cliffs 3 Nuclear Project, LLC, and Unistar Unclear Operating Services, LLC (Combined License Application for Calvert Cliffs Unit 3), LBP-09-04, 69 N.R.C. __, __ (slip op. at 64) (Mar. 24, 2009) ("Although we are not required to narrow contentions to make them acceptable, we may do so." (citing Pa. Power & Light Co. (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-6, 9 NRC 291, 295-96 (1979)).).
[38] Petition at 35.
[39] Id. (citing to Dr. Ross's expert report, Water Quality and Quantity Impacts from Proposed South Texas Plant Expansion (Apr. 2009) at 5 [hereinafter Ross Report]).

relief wells that collect water leaking from the unlined bottom of the MCR."[40] Dr. Ross further claims that "[c]oncentrations of tritium have increased in both wells over the original monitoring levels"[41] and that with the addition of proposed STP Units 3 and 4, "tritium concentrations in MCR and in the wastewater that is leaking through its unlined bottom are likely to increase."[42] Petitioners assert that the ER fails to consider this increase.[43]

For several reasons, Applicant objects to admission of this contention. First, Applicant asserts that the Ross Report alone is insufficient to warrant admission of the contention.[44] Second, Applicant contends that the Ross Report fails to include any reasoned basis to support its allegation that tritium levels would increase with the operation of proposed STP Units 3 and 4.[45] Third, Applicant maintains that Petitioners have failed to demonstrate that "the alleged increase in tritium levels would be significant or that it would affect any finding that the NRC must make to issue COLs for STP Units 3 and 4."[46]

NRC Staff also objects to the admission of this contention on grounds similar to those that Applicant has raised. NRC Staff contends that Petitioners fail to provide any facts to support this contention or to dispute portions of the COLA that discuss the very concerns raised in this contention.[47]

The Board concludes that Contention 9 is admissible. Petitioners assert that the operation of proposed STP Units 3 and 4 will increase tritium concentrations in groundwater and that the ER has failed to consider impacts and mitigative measures of the alleged increase. Data from the pressure relief wells[48] document tritium concentrations in water that is seeping from the MCR to adjacent groundwater. Although Applicant claims, citing FSAR Section

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[40] Ross Report at 5 (citing ER Table 2.3.3-6, page 2.3.3-19-20).
[41] Ross Report at 5.
[42] Id. at 6.
[43] Id.; see also Tr. at 157-58.
[44] STP Answer at 39-40.
[45] Id. at 40.
[46] Id. at 40-41.
[47] Staff Answer at 39-40.
[48] See ER Section 2.3.3; Ross Report at 6.

12.2.2.5, that the ABWR is designed not to release radioactive liquid effluent during normal operation, in fact FSAR Table 12.2-22 presents average annual liquid releases and includes entries for tritium activity and concentration. Petitioners contend these incremental tritium releases will increase concentrations in the MCR and in leakage to groundwater. Applicant has not provided references to provisions in the ER that address the effects of increased tritium releases to groundwater.

We conclude that Petitioners' assertion that the ER must address the potential effects of increased tritium releases to groundwater establishes an admissible contention of omission. Petitioners have provided a specific statement of the issue and have provided a brief explanation of the basis. Given that a fully adequate ER is a prerequisite to issuance of a COL, this issue is both material and within the scope of these proceedings.[49] Accordingly, the Board admits this contention.

3. Contention 10

Petitioners state in Contention 10:

> The Main Cooling Reservoir (MCR) will be in a near-state of design basis flood level with operation of all four plants. The reactor buildings, buildings, ultimate heat sink water storage basins, and the residual service water pump houses are below the design basis flood level and vulnerable to flooding.[50]

Petitioners claim ER Section 5.3.1 indicates the addition of STP Units 3 and 4 will raise the operating water level in the MCR from 47 ft. above mean sea level (MSL) to 49 ft. MSL.[51] At the same time, Petitioners note ER Section 2.3.1.1.3[52] indicates the design basis flood (DBF)[53] for the MCR is 48.5 ft. MSL. Based on these two assertions, Petitioners conclude "the MCR will

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[49] See 10 C.F.R. § 51.45(b) ("The environmental report shall . . . discuss the following considerations: (1) The impact of the proposed action on the environment. Impacts shall be discussed in proportion to their significance.").
[50] Petition at 36.
[51] Id. at 36.
[52] See ER Section 2.3.1-5.
[53] The design basis flood is the magnitude of the flood event that is used to evaluate safety structures, systems and components important to safety during facility design. See 10 C.F.R. Part 50, App. A, Criterion 2.

be in a near DBF level the entire time that all four units would be operational . . . [causing] Units 3 and 4 [to be] particularly vulnerable because significant parts of the units are below 48.5 MSL."[54]

Petitioners' concern focuses on the possibility that a breach of the embankment of the MCR would cause parts of STP Units 3 and 4 to be underwater. In support of this claim, Petitioners refer to FSAR Section 2.4S.10,[55] which Petitioners maintain sets flood protection requirements for "watertight structures and openings for plant and equipment below 48.5 feet MSL."[56] From this, Petitioners conclude "the fact that the MCR will be above the DBF elevation when all four units are operational means that much of the plant and equipment related to Units 3 and 4 will be in a continual state of vulnerability due to flooding." Accordingly, Petitioners seek to require Applicant to assess "whether an MCR DBF of 48.5 feet mean sea level (MSL) puts the units in an unreasonably vulnerable status due to flooding."[57]

Applicant asserts that, in a letter dated February 23, 2009, it provided the NRC with a revised "analysis of flooding from a breach of the MCR,"[58] and that this analysis establishes that STP Units 3 and 4 would withstand a design basis flood.[59] This included an amendment to the COLA that lowered the DBF from 48.5 to 40 ft. MSL, which Applicant claims means that all pieces of equipment below that level would be specifically outfitted to withstand a flood at that depth.[60] Applicant further argues that this contention is inadmissible inasmuch as Petitioners failed to challenge Applicant's updated information that was submitted on February 23, 2009.[61]

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[54] Petition at 36; see also Tr. at 163-4.
[55] Id. at 36. Petitioners refer as well to FSAR section 2.4S.2.
[56] Id.
[57] Id. at 37.
[58] STP Answer at 43-44.
[59] See id. at 44-45. As a consequence, Applicant claims that STP Units 3 and 4 could withstand a worst case breach of the MCR embankment measuring 417 ft. wide and creating a maximum flood level of 38.5 ft., where the level in the Main Cooling Reservoir was 50.9 ft. Tr. at 167-69.
[60] Applicant asserted during oral argument that this equipment is actually flood-proofed to 50 ft. Tr. at 176.
[61] STP Answer at 45.

NRC Staff also claims this contention is inadmissible because Petitioners have failed to provide adequate support for their claim that "the MCR will be in a near DBF level the entire time that all four units would be operational."[62] NRC Staff argues that Petitioners' assertions regarding the possibility of flood conditions at STP Units 3 and 4 is based on a misapprehension that the DBF level of 48.5 ft. is the level at which MCR flooding would occur. Instead, NRC Staff maintains that the DBF level reflects the "level of flooding the site [is] anticipated to sustain if there was a breach of the embankment, not the level at which the MCR would flood."[63] Stated otherwise, NRC Staff claims this contention is based on Petitioners' misunderstanding of information contained in the FSAR, and consequently, it should be rejected.[64]

We conclude this contention is inadmissible. At oral argument, Petitioners noted their confusion surrounding this contention.[65] Although some of Petitioners' confusion was understandably caused by their contention being framed around the prior version of the FSAR (without Petitioners having the benefit of Applicant's February 23, 2009 supplemental information), the fundamental problem is Petitioners' misunderstanding of what is considered a DBF.[66] Petitioners drafted this contention assuming, incorrectly, that the DBF was the level at which there would be flooding of the MCR, rather than flooding of Units 3 and 4 due to a breach of the MCR embankment. We find this contention fails to create a genuine material dispute.[67] See 10 C.F.R. § 2.309(f)(1)(vi).

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[62] Staff Answer at 41 (quoting Petition at 36).
[63] Staff Answer at 41-42 (citing FSAR 2.4S.2); see also Tr. at 164.
[64] Staff Answer at 42.
[65] See Tr. at 179-182.
[66] See Tr. at 165-66, 178.
[67] See 10 C.F.R. § 2.309(f)(1)(vi). Given that the updated version of the FSAR, which, although publicly available, was not easily accessible to Petitioners, we are concerned about confusion, brought to our attention during oral argument, regarding whether all relevant documents were available to Petitioners. We encourage NRC Staff to provide more guidance to Petitioners in this proceeding, and to other petitioners in future proceedings, about how to access publicly available documents in the docket. See Tr. at 165-83; 264-66. The NRC maintains an extensive website to aid the public in accessing NRC and Applicant documents. However, NRC Staff suggested during oral argument that the documents on this website do not encompass the entire universe of "available" documents in legal proceedings. In order to avoid such confusion

4. Contention 11

Petitioners state in Contention 11:

> The COLA is inadequate because it assumes there will be an adequate supply of fresh water for purposes of plant operations. This assumption is faulty because of the failure of the STP Environmental Report to analyze impacts of global warming on rainfall and the hydrological cycle.[68]

Petitioners contend that "global warming and its impacts on rainfall are better understood now and must be considered in the context of determining whether adequate water resources will be available for nuclear power plant operations."[69] Petitioners assert that global warming impacts will affect the water available for plant operations and that "compromised water resources should be considered from a quantitative perspective and a temperature sensitive analysis since plant operations are dependent on a narrow band of temperatures for plant operations."[70]

In addition to the claim that Applicant has made an inadequate assessment of global warming impacts on water supplies and water resources, including regional waterways and local aquifers, Petitioners assert additional issues with the COLA resulting from the impacts of climate change. First, Petitioners assert that a protracted drought could lead to drying of the MCR and that winds might disperse radioactively contaminated sediment.[71] Accordingly, Petitioners assert that the COLA erroneously fails to include a "complete radiological profile of the existing sediment in the MCR and an analysis of the cumulative radiological impacts expected from

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in the future, we suggest the NRC clarify how the public can access any and all documents that will have possible relevance in adjudicatory proceedings. When the NRC creates pathways to obtain documents on its public website, it is unfair to assert later, not only that there are relevant documents the NRC failed to place on its public website, but that a contention might be denied admission precisely because a user of the NRC's public website failed to find it — through no fault of that user. In the instant case, however, the failure of NRC Staff to post the February 23, 2009 letter did not prejudice Petitioners because, as noted in the preceding text, there were separate grounds for dismissing this contention. At a minimum, NRC Staff might consider a disclaimer on the website that there may be documents not on the website, but available through ADAMS, that may be relevant.

[68] Petition at 37.

[69] Id. at 37; Tr. at 184.

[70] Petition at 38.

[71] Id.

operations on it from STP Units 3 and 4."[72] Second, Petitioners assert that protracted drought, seismic activity or other natural events could impact the structural integrity of the MCR embankment, and that the COLA should consider downstream impacts from radioactive sediment, including mortality and morbidity, due to embankment failure.[73]

Petitioners also allege that, "given the very long term nature of the radiological hazard," the COLA should include an analysis of the management and security for post-license responsibility for the MCR.[74] Petitioners contend the COLA should include "an analysis of pollution impacts downstream from water contaminated by chemical treatment," and an analysis of the "differential impact of treatment of 100 percent of the water effluent versus the lesser amount of treatment proposed by the Applicant."[75]

With respect to the issues involving regional waterways and local aquifers, Petitioners assert that "[t]he COLA should also consider whether regional waterways will be impacted in terms of water quantity and quality by the use of vast quantities of water for Units 3 and 4."[76] Finally, Petitioners contend that the "COLA should contain an analysis of the production of heat energy emitted into the atmosphere and water by STP Units 3 and 4 in terms of contributions to global warming."[77]

Applicant opposes admission of the contention, claiming it "lack[s] adequate factual, documentary, and expert support, and fail[s] to establish the existence of a genuine dispute on a material issue of law or fact."[78] Disputing Petitioners' global warming claims, Applicant argues that Petitioners have failed to provide any support for their allegation that global warming will

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[72] Id.
[73] Id.
[74] Id.
[75] Id.
[76] Id. at 39.
[77] Id. at 39-40.
[78] STP Answer at 46. The NRC's pleading rules require merely that a petitioner provide a simple nexus between the contention and the referenced factual or legal support. See 10 C.F.R. § 2.309(f)(1)(v). They require nothing more. See footnote 16, supra.

create protracted drought conditions and/or compromised water resources.[79] Applicant claims that Petitioners have failed to dispute or even to acknowledge specific sections of the ER that deal with water availability and precipitation trends.[80] Applicant asserts other licensing boards have rejected similar contentions.[81]

NRC Staff also objects to admission of this contention, claiming it is unsupported and fails to raise a genuine dispute with the application.[82] NRC Staff objects to Petitioners' list of issues it claims Applicant should include in its COLA because Petitioners fail to provide any legal authority mandating Applicant to address these issues.[83] NRC Staff also takes issue with the lack of references or other factual support for Petitioners' contention.[84]

The Board concludes Contention 11 is inadmissible because Petitioners have failed to allege facts or expert opinion sufficient to demonstrate there is a genuine dispute with the Application. Although the primary assertion of Contention 11 is based on the premise that "impacts from global warming will include protracted drought that may seriously compromise water resources required for plant operations,"[85] Petitioners have failed to raise a genuine dispute with any portion of the Application. Instead, Petitioners merely cite to portions of the ER that discuss surface water use during operating conditions (ER Section 5.2.2.1), plant water use and water availability (ER Section 5.2.1), and drought information for the STP region (ER Section 2.3.1). As noted by Applicant, "Contention 11 fails to controvert the very portions of the ER that directly address water availability and precipitation trends."[86]

We conclude that Petitioners fail to controvert sections of the ER that discuss relevant monthly flow data of the Colorado River, historic droughts, local precipitation, and plant water

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[79] STP Answer at 47.
[80] Id. at 48; Tr. at 184-85, 187-89.
[81] STP Answer at 48-49.
[82] Staff Answer at 43. In fact, based on the information Applicant provided, NRC Staff claimed that it will consider global warming as part of its environmental analysis. Tr. at 191.
[83] Staff Answer at 44.
[84] Id. at 45-47.
[85] Petition at 38.
[86] STP Answer at 48.

supply (including under drought conditions).[87] Instead, Petitioners' sole grounds for asserting this contention are: (1) that NRC's rules should require all applicants to address climate change more extensively than is current practice, (2) that Applicant should perform analysis not only based on historical data but also on worst case scenarios regarding water availability, and (3) that Applicant erroneously relied on Table S-3 in estimating zero greenhouse gas emissions because even the NRC Staff recognizes that there are greenhouse emissions associated with the uranium fuel cycle. As explained below, even if Petitioners were correct about all three of these points, they have failed to create a genuine dispute with the COLA.

With respect to the additional items in Petitioners' Contention 11, all duplicate safety claims in Contention 8 that we concluded were not admissible are also inadmissible here. These include Petitioners' claim that the MCR could become dry, thereby dispersing radioactively contaminated sediments into the environment, and Petitioners' claim that if the MCR embankment failed there might be downstream radiation safety hazards.[88] Petitioners have neither alleged how the COLA fails to include specific safety-related information that NRC regulations require, nor alleged that the COLA fails to meet a relevant NRC safety standard. Accordingly, we conclude that this claim is inadmissible under 10 C.F.R. § 2.309(f)(1)(iv) because Petitioners have failed to demonstrate that these issues are material to the findings the NRC must make with respect to the safety of STP Units 3 and 4.

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[87] On a similar global warming contention in the William States Lee COL proceeding, petitioners there also failed to address the portions of that Application that discussed climate variations, which the Board found fatal to their contention. That Board held that a petitioner was obligated to "'read the pertinent portions of the license application . . . state the applicant's position and the petitioner's opposing view,' and explain why it disagrees with the Applicant." Duke Energy Carolinas, LLC (Combined License Application for William States Lee III Nuclear Station, Units 1 and 2), LBP-08-17, 68 NRC __, __ (slip op. at 16) (Sept. 22, 2008) (quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings, Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989)).

[88] See Petition at 34.

Petitioners claim that the COLA must include analysis of downstream impacts from water contaminated through chemical treatment.[89] However, there is ample discussion in the ER of wastewater treatment and potential impacts from these discharges, none of which Petitioners challenge. As noted by Applicant, the wastewater treatment system is described in ER Section 3.3.2, effluents containing chemicals or biocides are described in ER Section 3.6.1, chemical impacts are described in ER Section 5.2.3, and impacts of discharges to water are described in ER Section 5.5.1.1. Likewise, although Petitioners claim that potential impacts on regional water systems[90] should be considered in the COLA, in fact Applicant addresses these in sections of the ER that discuss the potential impacts and conclude such impacts would be small.[91]

Finally, we conclude that Petitioners have failed to allege facts or expert opinion in support of their claim that the nuclear power plant operations (thermal emissions) contribute to global warming and should be considered in the COLA. While Petitioners assert that roughly two-thirds of the energy that a nuclear power plant generates is released to the environment as heat, this does not contradict Applicant's discussion in ER Sections 3.4 (cooling system) and 5.3.3 (impacts associated with heat dissipation system). Again, Petitioners neither cite nor dispute these parts of the ER, nor do they identify and dispute other parts of the COLA with regard to thermal emissions, and so we conclude this contention is inadmissible for failure to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

5. Contention 12

Petitioners state in Contention 12:

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[89] Id. at 39

[90] Petitioners claim these impacts would include increases in salt content of waterways, local aquifers and drinking wells; coastal environmental impacts including freshwater flow into the Gulf affecting lagoons, estuaries and wetlands, as well as salinity patterns, nutrients, and dissolved oxygen levels; and such biological impacts as eutrophication, productivity and sediment impacts. See id. at 39.

[91] See ER Section 2.4.2 (aquatic ecosystems), Sections 3.3 and 3.4 (plant water needs and operation of the cooling system), and Section 5.3 (potential impacts to aquatic systems).

> Insufficient TPDES Permit Effluent Limits. The proposed Texas Pollution Discharge Elimination Permit fails to establish necessary effluent limits for the range of toxic and harmful chemicals that have been documented to be present or are possibly present in the power plant effluent.[92]

Petitioners claim factual support for this contention in the Ross Report.[93] While all parties agree with Dr. Ross that "[w]astewater discharges from the STP facility are regulated by a Texas Pollution Discharge Elimination System (TPDES) permit issued by the Texas Commission on Environmental Quality [TCEQ],"[94] both Applicant and the NRC Staff dispute her assertion that this permit fails to encompass the "parameters of significant concern associated with the proposed wastewater discharges."[95] In addition to listing in a table the specific constituents that she opines belong in the permit,[96] Dr. Ross claims that the permit fails to require

> monitoring for total dissolved solids or specific conductance, even though the specific conductance (a measure of total dissolved solids) of the MCR water is the condition that determines whether blowdown is necessary. The permit does not limit either the concentration or mass of metals other than iron or copper that would be expected in metal cleaning waste. The only limit on organic or hydrocarbon waste is a limit on oil and grease, which is an insensitive and imprecise measure of many chemicals of concern potentially present in the reactor wastewater.[97]

Dr. Ross faults ER Section 3.6-1 for claiming that discharges of biocides or chemical additives would be regulated under the parameters of the TPDES permit; instead, Dr. Ross asserts that this permit fails to impose specific effluent limitations on the discharges of these constituents.[98] Likewise, Dr. Ross maintains Applicant improperly claims its discharges of radioactive constituents comply with the TPDES permit because "the terms of the [TPDES] permit ignore radioactive characteristics."[99]

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[92] Petition at 40.
[93] Id. at 40 (citing Ross Report at 7).
[94] Ross Report at 7.
[95] Id.
[96] Id. at 8.
[97] Id. (internal footnote omitted).
[98] Ross Report at 8.
[99] Id. at 8-9.

Applicant asserts this contention is inadmissible because the Ross Report "does not provide a sufficient basis for admission of this contention."[100] Moreover, Applicant contends that effluent limits of the TPDES permit are outside the permissible scope of this proceeding and that "[t]he NRC does not have any authority to determine the terms to be included in a discharge permit."[101] Applicant further argues the Commission has previously rejected a similar claim that NRC regulations require such discharge permits of their licensees.[102]

NRC Staff likewise asserts this contention is outside the permissible scope of this proceeding because it challenges the TPDES permit limits.[103] NRC Staff maintains that "[w]hen water quality decisions have been made by a State pursuant to the Clean Water Act[104] and these decisions are raised in NRC licensing proceedings, the NRC is bound to take EPA's[105] considered decisions at face value."[106]

We conclude Contention 12 is inadmissible. 33 U.S.C. § 1371(c)(2) provides that "[n]othing in the National Environmental Policy Act of 1969 (83 Stat. 852) shall be deemed to . . . authorize any Federal agency . . . to review any effluent limitation or other requirement established pursuant to [the Clean Water Act] . . . ; or . . . authorize any such agency to impose any effluent limitation other than" those set by the Environmental Protection Agency or a state agency that has been delegated such authority — which here means TCEQ. Petitioners have

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[100] STP Answer at 57.
[101] Id.
[102] Id. at 57-58 (citing Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 639 (2004)).
[103] Staff Answer at 48-49 (citing 33 U.S.C § 1371(c)(2)).
[104] See 33 U.S.C. §§ 1251-1387.
[105] NRC Staff's erroneous reference to EPA instead of to TCEQ is inconsequential here. Although EPA was originally invested with responsibility to administer the National Pollutant Discharge Elimination System (NPDES) permit program of the Clean Water Act, it has since delegated that responsibility to the state of Texas, which administers it through the TCEQ. The program in Texas is called the Texas Pollutant Discharge Elimination System (TPDES). Accordingly, references to EPA with respect to the NPDES program Texas can be deemed to be references to its delegated agent, TCEQ and to TPDES. See 33 U.S.C. § 1342(b) and 40 C.F.R. Part 123.
[106] Staff Answer at 48 (citing Carolina Power & Light Co. (H.B. Robinson, Unit No.2), ALAB-569, 10 NRC 557, 561-62 (1979)).

failed to offer any legal support under the Atomic Energy Act of 1954 (AEA)[107] or 10 C.F.R. Part 50 or 52 contradicting this clear federal prohibition on the NRC regulating effluent discharges subject to TPDES permit limits or mandating that TCEQ adopt discharge limitations different than those TCEQ deems appropriate. Accordingly, this contention fails to satisfy the requirements of 10 C.F.R § 2.309(f)(1)(iii) and so is not admissible.

6. Contention 13

Petitioners state in Contention 13:

> Reliance on Dilution to Achieve Discharge Standards. The Environmental Report discusses the importance of dilution of nuclear power plant wastewater to meet discharge standards, but neglects to evaluate the relationship between a slightly larger effective Main Cooling Reservoir volume and the additional waste loads from doubling the electrical generation capacity.[108]

In support of this contention, Petitioners refer to the Ross Report,[109] wherein Dr. Ross criticizes Applicant's claim, in ER Section 10.1.2.3, that STP Units 3 and 4 will have small impacts on water quality or aquatic biota due to the dilution, which primarily comes from the large volume of the MCR.[110] Dr. Ross further states:

> The Environmental Report provides no quantification of the change in waste discharge loads from the proposed addition of two nuclear reactor power plants. It also fails to address the consequences of these load increases into a system with only a small change in the dilution factor. Without this information it is impossible to assess potential environmental impacts of the proposed expansion.[111]

Applicant challenges Petitioners' claims. First, Applicant asserts that the pleading of this contention is deficient because Petitioners provide no amplification of this contention other than to refer to the Ross Report. Second, Applicant claims this contention is inadmissible for failure to raise a material issue because, Applicant argues, the Ross Report erroneously states the ER

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[107] 42 U.S.C. §§ 2011-2297.
[108] Petition at 40.
[109] Id. (citing the Ross Report at 9).
[110] Ross Report at 9.
[111] Id.

used a dilution factor of ten;[112] Applicant maintains it instead employed no specific dilution factor.[113] Accordingly, Applicant asserts the Ross Report's conclusion that the small dilution factor will be unable to meet the discharge standards is based "on a basic misunderstanding of the ER and apparently a lack of review of the entire ER."[114] In particular, Applicant claims that the Ross Report fails to dispute ER Section 5.3.2.[115] Applicant would have it that ER Section 5.3.2 explains that, even with the addition of STP Units 3 and 4, the facility will experience the same amount of dilution that it currently achieves with only STP Units 1 and 2 operating and that "[t]he amount of dilution that could be achieved for two-unit operation will also be achieved for four-unit operation because the same discharge system will be used."[116] Therefore, Applicant claims this contention should be rejected as inadmissible.[117]

NRC Staff also asserts that it cannot determine what Petitioners are attempting to litigate with this contention, stating "it appears to be a contention of omission, alleging that the ER has omitted information regarding a 'relationship between a slightly larger effective [MCR] volume and the additional waste loads from doubling the electrical generation capacity.'"[118] However, insofar as Petitioners claim this to be an omission, NRC Staff maintains that Petitioners have failed to provide any support for the assertion that this information is legally required to be addressed in the COLA.[119] NRC Staff further points out that any claim involving discharges regulated by the TPDES permit must be rejected as outside the scope of the NRC's regulatory authority.[120] Accordingly, NRC Staff asserts this contention is inadmissible for failing to comply with 10 C.F.R. § 2.309(f)(1).[121]

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[112] STP Answer at 58-59.
[113] Id. at 59 n.227.
[114] Id. at 59.
[115] Id. at 59-61.
[116] Id. at 59-60.
[117] Id. at 60-61.
[118] Staff Answer at 49 (quoting Petition at 40).
[119] Staff Answer at 50.
[120] Id.
[121] Id. at 49.

Petitioners err in asserting that Applicant's ER fails to address the effect of increased waste loading associated with Units 3 and 4 on water quality and aquatic biota. To the contrary, the ER does address the effects of increased discharge and dilution on the watercourse that receives discharges from the MCR, the Colorado River.[122] We thus agree with Applicant and the NRC Staff that Petitioners' assertions are insufficient to create a genuine dispute. Accordingly, we conclude this contention is inadmissible for failure to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

7. Contention 14

Petitioners state in Contention 14:

> Unregulated Wastewater Discharge. A regulatory loophole has allowed a primary discharge of wastewater from the existing facility to be unregulated. The proposed expansion would be operated under the same regulatory framework. The harm caused by this regulatory failure will be magnified by the proposed addition of two additional nuclear powered generating plants.[123]

In support of this contention, Petitioners refer to the Ross Report,[124] which states, in pertinent part:

> An estimated 5,700 acre-feet per year leaks through the unlined bottom of the MCR into the underlying Gulf Coast Chicot Aquifer and approximately 68% of the leaked water is recovered by pumping pressure relief wells and discharging the pumped water into surface water drainage. Leaked water from the MCR that isn't removed by the relief wells migrates underground to seep into adjacent surface water bodies, into pumped wells, or into the Gulf of Mexico estuary system.[125]

Dr. Ross claims that "this leaked water through the bottom of the MCR has been the single significant wastewater discharge for the entire facility . . . [and that] [f]ailure to monitor and regulate leakage through the MCR reservoir bottom constitutes a failure to protect groundwater and surface water from plant operations."[126] Dr. Ross suggests this alleged failure to protect ground and surface water from the current discharges originating with STP Units 1

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[122] See ER Section 5.3-17, -18, -19; STP Answer at 59-61.
[123] Petition at 40.
[124] Id. (citing Ross Report at 9).
[125] Ross Report at 9 (internal footnote omitted).
[126] Ross Report at 10; Tr. at 234.

and 2 will become worse when proposed STP Units 3 and 4 commence operations because all four units will discharge into the MCR.[127]

Applicant claims this contention fails to satisfy numerous requirements of Section 2.309(f)(1),[128] and further asserts that it cannot determine the issue that Petitioners seek to litigate in this contention.[129] Applicant contends, on the one hand, that any challenge to an alleged "regulatory loophole," is actually an impermissible challenge to NRC rules that cannot be litigated in this proceeding.[130] On the other hand, Applicant claims that there is no "regulatory loophole" as alleged by Petitioners because "[a]n applicant for a TPDES permit must provide sufficient information about existing or planned impoundments so that TCEQ [the regulatory authority] can determine necessary requirements."[131] Applicant claims this Board lacks jurisdiction to address Petitioners' concern that "water that seeps through the bottom of the MCR is not regulated by the TPDES permit," because the "NRC has no authority to require the State of Texas to regulate such seepage."[132] Applicant also asks this Board to reject Petitioners' claim that tritium has been detected in onsite wells.[133]

NRC Staff asserts that, to the extent this contention seeks to dispute the terms and conditions of the TPDES permit, it is outside the scope of the proceeding.[134]

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[127] Ross Report at 9.
[128] STP Answer at 61-62.
[129] Id. at 62.
[130] Id.
[131] Id. at 62 n.238.
[132] STP Answer at 63.
[133] STP Answer at 64. Applicant also maintains that Petitioners have failed to dispute ER Section 6.2.6, which addresses historical tritium monitoring with respect to Units 1 and 2. Id. at n.246. This argument misses the mark. Petitioners raise a different issue in this contention, namely whether Applicant must analyze the additive impact of Units 3 and 4 on concentrations of contaminants in shallow groundwater as a result of seepage from the MCR. That issue is not addressed in ER Section 6.2.6.
[134] Staff Answer at 51. However, during oral argument, NRC Staff conceded that even where such discharge limitations are the exclusive province of another agency, this does not affect the NRC's obligations under NEPA to study the quality of the water in the pressure relief wells and the environmental impacts of discharges from such wells. Tr. at 244.

We admit Contention 14 in narrowed form. First, we reject Applicant's argument that this contention is beyond the permissible scope of this proceeding. Even if this contention concerned subject matter regulated by another governmental agency, such as TCEQ, the issue before us is whether the ER must analyze the environmental impacts of unregulated seepage from the MCR into adjacent groundwater.[135] 10 C.F.R. § 51.71(d) n.3 and Part 51 Appendix A § 5 mandate that the NRC Staff address such matters in its EIS,[136] and concomitantly, that Applicant address such potentially adverse environmental effects in its ER.[137]

While Petitioners' pleading of this contention is certainly not a model of clarity, at this stage of this proceeding, Applicant's claim — that it was surprised, and so prejudiced, by Petitioners' poor draftsmanship — rings hollow. The law has been clear for some time that "the scope of an adjudicatory hearing is specified by the Notice of Hearing."[138] Here, the Notice of Hearing establishes that the permissible scope of the hearing is confined solely to the application.[139] Accordingly, the fair reading of this contention is that Petitioners' claims must concern the alleged failure of Applicant to address this issue in its ER. As another Board recently observed "[b]ecause the ER is the only environmental document available when NRC

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[135] Although Applicant's Answer rejects Petitioners' claim that tritium has been detected in onsite wells, its own ER suggests that at least as late as 2005, there was tritium detected in those onsite wells. See ER Table 2.3.3-6. In any event, there is at least a dispute between the parties with respect to the meaning of the data in this table. That dispute can be resolved subsequently through a motion for summary disposition or on the basis of the information provided at an evidentiary hearing. But it is a merits dispute — not a pleading defect.

[136] See also Natural Res. Def. Council v. Morton, 458 F.2d 827, 834-36 (D.C. Cir. 1972); Progress Energy Florida, Inc. (Combined Licensed Application for Levy County Nuclear Power Plant, Units 1 and 2), 70 NRC __, __ (slip op. at 25) (July 8, 2009).

[137] Cf. 10 C.F.R. §§ 51.45(b)(2), 51.41 and 51.45(b)(3).

[138] PPL Bell Bend, LLC (Bell Bend Nuclear Power Plant), LBP-09-18, 70 NRC __, __ (slip op. at 55) (Aug. 10, 2009) (citing Pub. Serv. Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976)). See also Florida Power and Light Co. (St. Lucie Plant, Unit No. 1), LBP 88-10A, 27 NRC 452, 463 (1988) (citing Commonwealth Edison Co., LBP 80-30, 12 NRC 419, 426 (1980) ("the scope of the contention is bounded by the scope of the notice of hearing")).

[139] See [STP], Notice of Order, Hearing, and Opportunity to Petition for Leave to Intervene, 74 Fed. Reg. 7934 (Feb. 20, 2009). See also U.S. Dep't of Energy (High Level Waste Repository), CLI-09-14, 69 NRC __, __ (slip op. at 13) (June 30, 2009).

issues its notice of opportunity to request a hearing, initial contentions necessarily focus on the adequacy of the applicant's ER under Part 51."[140]

Secondly, we reject Applicant's argument that its TPDES permit establishes effluent limitations on seepage from the MCR into the shallow groundwater. To the contrary, all of the outfalls where TCEQ requires Applicant to monitor releases refer either to direct discharges to Texas surface waters or into the MCR itself.[141] Applicant's TCEQ permit contemplates no monitoring points for seepage from the MCR into the adjacent shallow groundwater.[142] In fact, during oral argument, it became clear that Applicant has collected no data on the constituents of this groundwater.[143]

Applicant claims that the NRC cannot address — by EIS or otherwise — this wastewater seepage from the MCR because of 33 U.S.C. § 1371(c)(2).[144] To the contrary, that provision of the Clean Water Act expressly prohibits an agency such as the NRC from using NEPA to impose additional effluent limitations on Applicant's wastewater discharges to surface waters. Section 1371(c)(2) does not affect the permissible reach of the NRC's NEPA obligations with respect to discharges to groundwater.[145] Accordingly, Contention 14 is admitted insofar as it

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[140] Progress Energy, 70 NRC at __ (slip op. at 28).
[141] Ross Report at 7, Table 2.
[142] Id. at 10.
[143] Tr. at 251-2.
[144] See STP Answer at 63 n.243. Applicant has mischaracterized the issues this contention implicates. Applicant argues the "NRC has no authority to require the State of Texas to regulate such seepage." Id. at 63. We are not concerned here with the relative powers of federal and state agencies; rather, we are addressing only whether NRC rules obligate Applicant to address certain potentially adverse environmental impacts in its ER.
[145] 33 U.S.C. § 1371(c)(2) provides that nothing in NEPA shall be deemed to "authorize any such agency to impose, as a condition precedent to the issuance of any license or permit, any effluent limitation other than any such limitation established pursuant to this chapter." The reach of "this chapter" of the Clean Water Act is confined to navigable waters, which do not even encompass all surface waters. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, 531 U.S. 159 (2001). Certainly, the Clean Water Act does not authorize regulation of discharges to groundwater. Exxon Corp. v. Train, 554 F.2d 1310 (5th Cir. 1977). This is the case even if such groundwater is adjacent to navigable water. See San Francisco Baykeeper v. Cargill Salt Div., 481 F.3d 700, 709 (9th Cir. 2009).

complains that the ER fails to analyze adequately the environmental impacts of unregulated seepage from the MCR into the adjacent shallow groundwater.

8. Contention 15

Petitioners state in Contention 15:

> Unevaluated Reduction in Surface Water Flow. The Environmental Report fails to evaluate the effect of Colorado River withdrawals of up to 48% of the river flow on the river and estuary resources. The Environmental Report fails to demonstrate the availability of necessary surface water from the Colorado River during drought conditions. The Environmental Report also fails to evaluate the effect of increased groundwater withdrawals on flow in adjacent streams and rivers including the Colorado River.[146]

This contention addresses two separate but closely related environmental concerns: the direct effects of STP Units 3 and 4 on surface water flow and the effects of increased groundwater withdrawals on surface water flow. In support of this contention, Petitioners refer to the Ross Report,[147] which, according to Petitioners, identifies four specific omissions from the ER. First, Dr. Ross states "[t]he Environmental Report fails to discuss . . . whether the backup volume can be delivered reliably to this downstream location on the Colorado River at a sufficient flow to be useable during drought conditions."[148] Second, Dr. Ross contends the ER fails to address the "environmental affects [sic] during conditions when water withdrawal for the nuclear power plants is a significant fraction of the total river flow."[149] In this regard, Dr. Ross contends there are numerous examples under Applicant's current operating configuration for STP Units 1 and 2 where Applicant withdrew a "significant fraction" of the total Colorado River flow — so that the addition of STP Units 3 and 4 will only exacerbate this withdrawal rate. Third, Dr. Ross opines that adding two units will result in "doubling of the surface water demand"[150] and claims that the ER has failed to consider this.[151] Finally, Dr. Ross claims that, because of

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[146] Petition at 41.
[147] Id. at 41 (citing Ross Report at 11).
[148] Ross Report at 11.
[149] Id. at 11.
[150] Id.
[151] Id.

this strain on surface water, Applicant must of necessity turn to groundwater, that the groundwater table will be lowered through "increased pumping to meet the water needs of the proposed nuclear power plant expansion," and that such environmental effects have not been accounted for in the ER.[152]

Applicant claims the Ross Report does not adequately support this contention.[153] First, Applicant disputes the Ross Report's claims with respect to water withdrawal, backup water supply, and surface water flow. Second, Applicant claims Dr. Ross fails to specify any potential adverse environmental effects of obtaining cooling water in drought conditions.[154] Specifically, Applicant contends that Petitioners have failed to show there would be any adverse environmental impact if backup water were unavailable during drought conditions.[155] Moreover, Applicant asserts that the ER addresses the very concerns that Dr. Ross raises,[156] and that Petitioners have failed to provide any legal requirement obligating Applicant to provide any additional information.[157]

NRC Staff contends that Petitioners have failed to provide any legal or regulatory support that would mandate an analysis of the environmental impacts of Applicant's water use, thereby failing to raise a genuine dispute with the COLA.[158] NRC Staff argues that several sections of Applicant's ER, as well as Applicant's responses to NRC Staff requests for additional information (RAIs), address current water use, water use during drought, and water use permitting limits, all of which NRC Staff asserts Petitioners have failed to dispute.[159] NRC Staff

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[152] Id. at 13-14.
[153] STP Answer at 65.
[154] Id. at 65-67.
[155] Id. at 68. Applicant cites to the Wastewater Management Plan of the Lower Colorado River Association that evaluated "all four of the STP units and concluded that it would not require any water from storage during most of the critical drought period." Id. at 68 n.258.
[156] Id. at 69 (citing ER Sections 2.3.2, 3.3, 4.2.2, 5.2.2 and 6.3).
[157] STP Answer at 69-70.
[158] Staff Answer at 53-54.
[159] Id. at 54. We note that NRC Staff also objects to assertions made in the Ross Report, claiming they are unsupported, fail to indicate any effects in the licensing proceeding, and fail to provide any regulatory authority. Id. at 55-56.

also maintains that Petitioners failed to discuss the diversion limits set forth in ER page 2.3.2-3 and groundwater limitations set forth in ER Sections 2.3.1.2.4.3 and 5.2.2.2.[160]

We conclude this contention is inadmissible. Petitioners' complaints regarding water use fail to acknowledge, let alone dispute, Applicant's extended discussion of water use, including the impacts to groundwater and surface waters, in the ER.[161] Petitioners have likewise failed to provide any legal or factual support for their claim that the relevant analysis in the ER is incorrect. With respect to Petitioners' claim that the COLA contains critical omissions, Petitioners' contention fails to raise a genuine dispute with the application, and so we conclude it is inadmissible under 10 C.F.R. § 2.309 (f)(1)(vi).

9. Contention 16

Petitioners state in Contention 16:

> Unevaluated Reduction in Groundwater Supply for Adjacent Landowners. The Environmental Report fails to provide adequate information regarding the effect of the expansion on the availability of groundwater from the regional Gulf Coast Aquifer. A determination of key information necessary for an analysis of impact is deferred to a later detailed engineering phase. Information provided in the Environmental Report underestimates the predicted effect of the proposed expansion on groundwater availability to wells on adjacent property.[162]

In support of this contention, Petitioners refer to the Ross Report,[163] where Dr. Ross challenges Applicant's assumptions regarding the "predicted drop in groundwater levels."[164] Contrary to Applicant's position, Dr. Ross claims:

> Estimated groundwater use would more than double from an average of 798 gallons per minute for the existing facility over the last five years, to a projected level of 2040 gallons per minute for all four nuclear power generating plants. The current permit allows an average pumping rate of 1,860 gallons per minute.[165]

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[160] Id. at 55-56.
[161] See ER Sections 2.3.2, 3.3, 4.2.2, 5.2.2, 6.3, and 10.1.
[162] Petition at 41.
[163] Id. at 41 (citing the Ross Report at 14).
[164] Ross Report at 14.
[165] Id.

In addition, Dr. Ross faults Applicant's assertion in the ER that the evaluation of groundwater availability will not be addressed until after Applicant has completed "detailed engineering."[166]

Applicant argues this contention fails to raise a genuine dispute with the COLA. Applicant also asserts that Dr. Ross has taken out of context its statement in the ER that it will postpone the evaluation of groundwater availability until it can be addressed later "as part of detailed engineering."[167] Applicant claims that, in several places in the ER,[168] it has addressed groundwater issues pertinent to this contention, and further claims that Petitioners have not attempted to controvert the discussions in those sections of the ER.[169] Applicant further asserts that Petitioners fail to demonstrate the materiality of their assertions.[170] In support of its assertion that Petitioners' contention is "not material," Applicant disputes Petitioners' assertion — that withdrawal of additional groundwater might create a significant environmental problem — on the ground that the lower aquifer does not support drinking water wells within 3 miles of the plant, and the closest well (located over 1 mile away) is used for watering livestock.[171]

Moreover, Applicant maintains that the relevant inquiry is not whether additional groundwater will be available but "whether additional wells will be needed."[172] During oral argument, Applicant asserted that either it might need a small increase in its current groundwater withdrawal permit (which currently is based on the needs of only STP Units 1 and 2), or it might be able to avoid amending that permit by implementing water conservation

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[166] Id. (quoting ER Section 2.3.1-22).
[167] STP Answer at 71-72.
[168] Id. at 72-74 (citing ER Sections 2.3.1-22, 5.2.2.2, and 10.5S.2); Tr. at 70-75.
[169] STP Answer at 74 (citing ER Sections 5.2.2.2 and 10.5S.2).
[170] STP Answer at 74. NRC Staff made a similar claim that this contention is inadmissible as it fails to provide any support for its assertions and does not raise a material dispute with the application. Staff Answer at 58-60.
[171] Tr. at 271-72.
[172] STP Answer at 73. This is a distinction without a difference. If Applicant needs more groundwater than it currently is permitted to withdraw, it will need to apply for additional permits — the practical effect of which is to enable Applicant to withdraw more groundwater.

measures in the plant and obtaining additional make-up water from the Main Cooling Reservoir.[173]

Initially, the NRC Staff asserted in its Answer that Petitioners were wrong in their claim that Applicant would be withdrawing groundwater in excess of its permitted amount of 3,000 acre-feet per year.[174] However, NRC Staff later concluded that Petitioners might be correct. In a letter dated June 19, 2009,[175] NRC Staff indicated that Applicant, in ER Table 5.10-1, appears to be retaining the option of increasing its groundwater pumping beyond its permitted amount:

> STPNOC will apply to the Coastal Plains Groundwater Conservation District for an increase in the site's current groundwater permit from 3000 acre-feet per year to 3500 acre-feet per year up to the current permitted limit with the remainder of the water requirements met by water from the Main Cooling Reservoir (MCR).[176]

NRC Staff indicated that it is issuing an RAI to clarify this issue.[177]

We conclude Contention 16 is admissible. Applicant does not dispute that the ER has only analyzed the impacts from pumping groundwater at the current permitted level, not at the increased withdrawal rate that STP Units 3 and 4 may require. Petitioners claim that Applicant is obligated to analyze the impacts of pumping groundwater at this higher level[178] — which Applicant has unequivocally stated it might choose to do. Although Applicant argues that Petitioners' contention is not "material," Applicant's argument misses the point. The word "material" appears in two separate places in the NRC pleading requirements. One requires a petitioner to demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding. The second requires a petitioner to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact. This second requirement is not a second hurdle of materiality a petitioner must meet, but

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[173] Tr. at 270-271.
[174] Staff Answer at 58-60.
[175] See Letter from Counsel for NRC Staff, Jessica Bielecki (June 19, 2009).
[176] Id. (citing ER Table 5.10-1 (internal quotations and emphasis omitted)).
[177] Id.
[178] See Ross Report at 14.

rather reiterates that a petitioner must demonstrate that its dispute is "material" under the first requirement. Thus, a contention is admissible if it raises a genuine[179] dispute that is material to the findings the NRC must make to support the action involved.[180]

In several places in its ER, Applicant has made clear that it holds open the option to withdraw more groundwater than it is currently permitted to withdraw:

- FSAR section 2.4S.12.3.3 addresses obtaining ground water during outages: "[p]eak demand for outages could be met by increasing the permitted groundwater allotment for short-term uses."

- ER Section 5.2.1 states: "STPNOC is currently evaluating the possibility of permitting and installing additional groundwater wells at the STP site."

- ER Section 5.2.2.2 states: "STPNOC is currently evaluating the possibility of permitting and installing additional groundwater wells at the STP site."

- ER Section 10.5S.2.2 states: "The groundwater use requirements for the operation of STP 3 & 4 and STP 1 & 2 could be more than the withdrawal rate permitted by the CPGCD. STPNOC is currently evaluating the possibility of permitting and installing additional groundwater wells at the STP site."

Applicant's representation that it may withdraw additional groundwater makes the contention material to this proceeding.

The sole issue before us, then, is simply whether the ER must analyze the environmental impacts of groundwater withdrawal in excess of Applicant's currently permitted amount, a realistic possibility — as Applicant has conceded. NEPA does not command one outcome over another;[181] it merely requires that the proposed action and alternatives to such

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[179] Litigation over the term "genuine" is not easy to find, but a dispute that is not genuine would be one that would be contrived, and hence not justiciable. "[A] justiciable controversy must involve adverse parties representing a true clash of interests. The questions raised must be 'presented in an adversary context and in a form historically viewed as capable of resolution through the judicial process.'" Hydro Resources, Inc. (P.O. Box 777, Crownpoint, New Mexico 87313), LBP-05-17, 62 NRC 77, 91 (2005) (quoting Flast v. Cohen, 392 U.S. 83, 95 (1968)).

[180] 10 C.F.R. § 2.309(f)(1)(iv).

[181] See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) ("NEPA itself does not mandate particular results, but simply prescribes the necessary process.").

proposed action be examined.[182] Therefore, Contention 16 is admitted in part to address whether the ER has adequately considered the environmental impact of the possible withdrawal of additional groundwater in excess of that authorized by the current permits.

II. Conclusion

Having previously found standing on the part of Petitioners, and having admitted one additional contention in our August 27, 2009 Order, we conclude that the requested hearing in this proceeding should be granted and a total of five contentions heard.

III. Order

A. Petitioners SEED, Public Citizen, and the South Texas Association for Responsible Energy having been admitted as parties in this proceeding, their Petition for Intervention and Request for Hearing is granted in part and denied in part. A hearing is GRANTED with respect to their Contentions 8, 9, 14, and 16, and 8, 9, 14, and 16 are limited as follows:

> Contention 8. The Environmental Report fails to address adequately the environmental impacts associated with the increase in radionuclide concentration in the MCR due to operation of STP Units 3 & 4.
>
> Contention 9. The Environmental Report fails to address the environmental impacts associated with the increase in radionuclide concentration in the MCR due to operation of STP Units 3 & 4.
>
> Contention 14. The Environmental Report fails to analyze the environmental impacts of unregulated seepage from the MCR into the adjacent shallow groundwater
>
> Contention 16. The Environmental Report fails to consider adequately the environmental impact of the possible withdrawal of additional groundwater in excess of that authorized by the current permits.

B. All other contentions are inadmissible and will not be litigated in this proceeding, except for Contention 21, which was admitted under our August 27, 2009 Order.

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[182] Although Petitioner's challenge at this point is to the adequacy of Applicant's ER under 10 C.F.R. Part 51, it is important to keep in mind that "10 C.F.R. § 2.309(f)(2) recognizes that, when NRC issues the EIS, petitioners have the opportunity to file a second wave of environmental contentions. Such new contentions focus on the adequacy of the NRC Staff's EIS (or EA) under NEPA." Progress Energy, 70 NRC at __ (slip op. at 28).

C. Regarding the conduct of the hearing in this proceeding, as Petitioners have not requested that the hearing be conducted under 10 C.F.R. Part 2, Subpart G, we ORDER that the proceeding be conducted under the procedures set forth at 10 C.F.R. Part 2, Subparts C and L.

D. In October 2009, the Licensing Board will issue an order scheduling an initial scheduling conference pursuant 10 C.F.R. § 2.332(a), during which the parties will address relevant scheduling matters in the proceeding. Thereafter, the Board will issue an Order setting forth a schedule of further proceedings in this matter. Prior to such time, the parties shall confer in the interest of reaching consensus on scheduling matters and submitting a joint proposal to the Board for its consideration.

E. This Order is subject to appeal to the Commission in accordance with the provisions of 10 C.F.R. §§ 2.311(d)(1) and the Commission's order on September 23, 2009. See South Texas Project Nuclear Operating Co. (South Texas Project, Units 3 and 4), CLI-09-18, 70 NRC __ (slip op.) (Sept. 23, 2009).

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD

/RA/

Michael M. Gibson, Chairman
ADMINISTRATIVE JUDGE

/RA

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

/RA/

Dr. Randall J. Charbeneau
ADMINISTRATIVE JUDGE

Rockville, Maryland
September 29, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY	)	Docket Nos. 52-012-COL and 52-013-COL
	)	
	)	
(South Texas Project Units 3 and 4)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMORANDUM AND ORDER (RULING ON ADMISSIBILITY OF CONTENTIONS 8-16) (LBP-09-25) have been served upon the following persons by the Electronic Information Exchange.

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[Original signed by Evangeline S. Ngbea]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 29th day of September 2009