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OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RIGHTS
STATE OF UTAH

In the Matter of: Change Application No. A35402 (Water Right Nos. 89-74, 89-1285, and 89-1315) And: Change Application No. a35874 (Water Right No. 09-462)	REQUEST FOR STATE ENGINEER RECONSIDERATION February 9, 2012

Uranium Watch, Living Rivers, Center for Water Advocacy, David Erley, Pamela R. Hackley, and Elfreda Lou Mortensen hereby submit a timely Request for State Engineer Reconsideration of Order of the State Engineer For Permanent Change Application Number 89-74 (a35402) and Order of the State Engineer For Permanent Change Application Number 09-462 (a35874), both dated January 20, 2012. This request is submitted pursuant to Utah Code Ann. § 63G-4-302.

Uranium Watch, Living Rivers, Center for Water Advocacy, Pamala R. Hackley, and Elfreda Lou Mortensen protested Permanent Change Application Number 89-74 (a35402). Uranium Watch, Living Rivers, David Erley, and Pamala R. Hackley protested Permanent Change Application Number 09-462 (a35874). Therefore, these parties (Parties or Protestors) have standing to submit this Request for State Engineer

Reconsideration.

This request is timely, because it is submitted on February 9, 2012, within 20 days of the State Engineer's January 20, 2012, Orders.

1. BACKGROUND

1.1. The Application for Permanent Change of Water No. a35406 (Water Rights 89-74, 89-1285, and 89-1513) was filed with the Utah Division of Water Rights (DWR) on March 30, 2009, by the Kane County Water Conservancy District (KCWCD). The Application for Permanent Change of Water No. a35874 (Water Right 09-462) was filed with the DWR on August 27, 2009, by the San Juan County Water Conservancy District (KCWCD). The purpose of the Change Applications was the transfer of water from the Colorado River and San Juan River to the Green River, at the City of Green River, for a proposed nuclear generating station, the Blue Castle Project. The Change Applications were noticed and a number of protests were received for each Application. The DWR held a hearing on the Applications and protests on January 12, 2010, in Green River. At the hearing, oral and written testimony was presented by the Applicants, Protestors, and Blue Castle Holdings Inc. Over the next two years additional testimony was submitted by the Applicants and various protestors.

1.2. Water Rights 89-74, 89-1285, and 89-1513 were assigned and conveyed to the KCWCD on November 25, 2003, by AMCA Coal Leasing, Inc. KCWCD filed a Request of Extension of Time to Show Proof of Beneficial Use for Water Rights 89-74, 89-1285, and 89-1513 on November 29, 2003. The Extension Request was approved by the State Engineer, DWR, on April 22. 2004.

1.3. The KCWCD signed a Water Rights Lease Agreement for Water Rights 89-74,

89-1285, and 89-1513 with Transition Power Development LLC (TPD) on September 20, 2007,[1] the effective date of the Lease Agreement. TPD had registered with the Utah Division of Corporations as a Limited Liability company on February 2, 2007.[2] *See* Exhibit A.

1.4. The SJCWCD signed a Water Rights Lease Agreement for Water Right 09-462 with TPD on November 30, 2007.[3]

1.5. Blue Castle Holdings Inc. (BCH) incorporated as a Delaware Corporation on June 4, 2008. *See* Exhibit B. BCH registered as a foreign corporation with the Utah Division of Corporations on August 10, 2010. *See* Exhibit C. Some of the same individuals have positions in both TPD and BCH. However, there is no documentation regarding any legal, corporate, or fiduciary relationship between TPD and BCH available on the public record.

1.6. An Assignment and Assumption of Water Rights Lease Agreement and a Memorandum of Assignment of Water Rights Lease Agreement was signed by TPD, BCH, and SJCWCD on June 17, 2010. *See* Exhibit D. These documents assigned Water Rights Lease Agreement for Water Right 09-462 from TPD to BCH. A new Water Rights Lease Agreement for Water Right 09-462 between SJCWCD and BCH is dated September 15, 2010.

1.7. An Assignment and Assumption of Water Rights Lease Agreement was signed by

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[1] Water Rights Lease Agreement. Attachment A to Protest and Hearing Request, Change Application No. a35402 (Water Right Nos. 89-74, 89-1285, and 89-1315), Living Rivers, May 26, 2009.

[2] https://secure.utah.gov/bes/action/details?entity=6478245-0160

[3] Water Rights Lease Agreement. Attachment C to Protest and Hearing Request, Change Application No. a35874 (Water Right No. 09-462), Living Rivers, October 14, 2009.

TPD, BCH, and KCWCD on July 14, 2010. *See* Exhibit E.

2. STATUTORY REQUIREMENTS

2.1. Utah Code Ann. § 73-3-8 lays out the criteria for the approval of a water right appropriation or change application. Section 73-3-8 states, in pertinent part:

> (1) (a) It shall be the duty of the state engineer to approve an application if:
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> (i) there is unappropriated water in the proposed source;
> (ii) the proposed use will not impair existing rights or interfere with the more beneficial use of the water;
> (iii) the proposed plan is physically and economically feasible, unless the application is filed by the United States Bureau of Reclamation, and would not prove detrimental to the public welfare;
> (iv) the applicant has the financial ability to complete the proposed works; and
> (v) the application was filed in good faith and not for purposes of speculation or monopoly.
> (b) (i) If the state engineer, because of information in the state engineer's possession obtained either by the state engineer's own investigation or otherwise, has reason to believe that an application to appropriate water will interfere with its more beneficial use for irrigation, domestic or culinary, stock watering, power or mining development, or manufacturing, or will unreasonably affect public recreation or the natural stream environment, or will prove detrimental to the public welfare, it is the state engineer's duty to withhold approval or rejection of the application until the state engineer has investigated the matter.
> (ii) If an application does not meet the requirements of this section, it shall be rejected.

2.2. Utah Code Ann § 73-3-11 gives the State Engineer authority to request information in order to protect the public interest and information releated to the financial ability of the Applicants.

> 73-3-11. Statement of financial ability of applicants.
> Before either approving or rejecting an application the state engineer may require such additional information as will enable him properly to guard the public interests, and may require a statement of the following facts: In case of an incorporated company, he may require the submission

> of the articles of incorporation, the names and places of residence of its directors and officers, and the amount of its authorized and its paid-up capital. If the applicant is not a corporation, he may require a showing as to the names of the persons proposing to make the appropriation and a showing of facts necessary to enable him to determine whether or not they are qualified appropriators and have the financial ability to carry out the proposed work, and whether or not the application has been made in good faith.

3. REQUEST FOR RECONSIDERATION

The Request for Reconsideration is based on an evaluation of the State Engineer's Orders of January 20, 2012. The Orders contain erroneous and unsubstantiated statements and did not demonstrate that the Applications met the statutory requirements for a change of the point of diversion, use, and place of use of the subject water rights.

Additionally, the State Engineer failed to specifically address and respond to, with particularity and specificity, the many issues brought forth by the protesters in the water rights proceeding. There was no document that listed the issues brought forward and responses to those statement of facts, issues, and concerns.

3.1. The Applicants

3.1.1. Throughout the Orders, the State Engineer refers to the "Applicant's Statement" and includes BCH statements and representations in this category. The Applicants for Change Application Number 89-74 (a35402) and Number 09-462 (a35874) are the Kane County and San Juan County Water Conservancy Districts, respectively. At the time of the 2009 Applications and at the time of the January 2010 hearing and much of the subsequent testimony and submittals from the Water Conservancy Districts, BCH was not the lessor of the subject water rights. The water rights leases were not assigned to BCH until June 17, 2010, (SJCWCD) and July 14,

2010, (KCWCD). BCH did not even register with the Utah Division of Corporations until August 10, 2010.

Therefore, when the Applications were submitted and for much of this proceeding, BCH had no legitimate interest in the subject water rights or water rights proceeding.

3.1.2. The Effective Date of the Water Rights Lease Agreement[4] between the KCWCD and BCH was September 20, 2007. *See* Exhibit F. The Lease Agreement, Section 13, Termination of Agreement, states that the Agreement shall terminate upon the earliest to occur of the following events.... Section 13.d. provides one of the events: "Three(3) years after the Effective Date if there is no Final Approval of the Change Application, unless mutually agreed upon by the Parties." Three years after the effective date of the Agreement was September 20, 2010. The Final Approval of the Change Application did not occur until January 12, 2012. Based on responses to Utah Government Records Access and Management Act requests, it does not appear that the Parties agreed to change the termination date in Section 13.d. If the Parties did agree to change that Lease Agreement date, it is not reflected in the current Lease Agreement.

Therefore, it appears that the Water Rights Lease Agreement between the KCWCD and BCH was terminated as of September 20, 2010.

3.2. Section 73-3-8(1)(a)(i) — Unappropriated Water in the Proposed Source

3.2.1. The Request for Reconsideration includes an "Independent Technical Analysis of Orders of State Engineer, Permanent Change Applications 09-462 and 89-74." This

[4] Water Rights Lease Agreement. Attachment A to Protest and Hearing Request, Change Application No. a35402 (Water Right Nos. 89-74, 89-1285, and 89-1315), Living Rivers, May 26, 2009.

Independent Technical Analysis was developed by Lawrence R. Eichner, P.E. The cover letter, Mr. Eichner's Curriculum Vitae, and the Technical Analysis are incorporated hereto. *See* Exhibit G.

3.2.2. Colorado River Allocation. According to the State Engineer:

> Considering current hydrology, Mexican treaty obligations, and other law of the river issues, Utah's share of the river is currently assumed to be about 1.4 million acre-feet per year…. The SE states, "It is estimated that Utah water users currently deplete approximately one million acre-feet annually, which represents an under utilization of Utah's share of the Colorado River allocation." [5]

The real threats to Utah's ability to meet its obligations under the Compact, however, are approved but unperfected Utah water rights in the Colorado Basin (paper water rights) "could significantly exceed 500,000 acre-feet."[6] This means the state's current water deficit, on paper, could exceed 140,000 acre-feet.[7]

Not only did the commission that created the Compact over estimate the amount of water available in the Colorado River, but, even though they knew that Mexico, the Navajo Nation, and other Tribes had rights to the river when it divvied up the presumed 1.5 million acre-feet annual flow, it did not define the claims. The slight to the Tribes in the Compact occurred even though an 1850 treaty with the Navajo Nation, reinforced by a 1908 Supreme Court ruling, guaranteed water rights necessary for a permanent

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[5] Order at 4 (emphasis in original).

[6] U.S. Bureau of Land Management, "Proposed Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement, "Vol. 2, September 2008, Table 5.1.2-1, See also Table 5.1.1-1 for surface mining. http://osteis.anl.gov/documents/fpeis/volumes/OSTS_FPEIS_Vol_2.pdf.

[7] *Id.*

homeland. In fact, in 2003, the Navajo Nation sued the U.S. Department of the interior seeking to enforce the U.S. government to at last, quantify its rights. A strict interpretation of the treaty and ruling in *Winters v. United States*,[8] shows the tribe's rights trump all others, because the were affirmed before the Compact came into existence.

3.2.3. The State Engineer claims, "Approval of this change application does not constitute a new appropriation of water within the Colorado River Basin although it does constitute a new diversion demand on the Green River, which is part of that Basin." The State Engineer, however, admits that this a transferred water right by stating, as in this case, "when considering a change application, it is not to be rejected for the sole reason that the change would impair a vested right. A change application may be approved with conditions designed to mitigate impairment or provide compensation to the affected party…"[9]

3.2.4. Significant storage projects—federal, state and private—have been constructed since 1922 that currently allow for storage of four times the mean annual flow of the river. The flexibility proved by storage reservoirs in capturing above-average flows on good water years allows the Upper Basin States to meet their Compact obligations to the Lower Basin States during drier periods.[10] Other experts believe, however, that such projections are based on extremely optimistic annual runoff predictions. A 2007 estimate by the Bureau of Reclamation, for example, indicates that under current scenarios, Utah will use more water from the Colorado River in 2020 than

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[8] 207 U.S. 564 (1908).
[9] Orders at 7.
[10] *Id*. at 5.

may be available.[11]

3.2.5. Indeed, much of the State Engineer's conclusions regarding water availability under the Compact seem to be based on the Applicants' unsupported "beliefs" that sufficient water is available for the water right transfer. The Applicants, for example, have attempted to create the illusion that water is available by predicting that certain undeveloped water rights will actually be approved and then transferred so as to benefit the Green River.

The Applicant states:

> With regards to the Green River system, there are approved yet undeveloped water rights that propose to divert water from the Green River. Just which applications ultimately are developed and which ones are not developed will be addressed through the water rights administrative process. For example, several water rights that were segregated from the parent Flaming Gorge application are in the process of reverting to the Utah Board of Water resources and have been or will be committed to the Lake Powell Pipe Line Project. As a result, the points of diversion for these block of water area in the process of moving downstream to Lake Powell, thus reducing the demand on the Green River.[12]

This, however, assumes that the Flaming Gorge applications will be granted, which cannot be known until they go through the proper approval process under the Water Code and state regulations. In fact, the Applicants admit that there is no water available and that the State Engineer has miscalculated water availability by stating, "While, the Upper Colorado River Basin is over-appropriated on paper, the parent water rights upon which change application

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[11] "Fossil Foolishness, Utah's Pursuit of Tar Sands and Oil Shale," Western Resource Advocates, 2010, p. 17. http://www.westernresourceadvocates.org/land/utosts/utreport.php.

[12] District's Response p. 4.

numbers a35402 and a35873 are filed are approved and included with the State Engineers accounting of potential future water uses within the basin."

3.2.6. In fact, if the State Engineer is including future predictions on whether water rights will be issued out of the Colorado River Basin, he should also estimate the impact of future withdrawals to develop oil shale resources which are every bit, if not more, likely to be developed then the Flaming George applications.

Although the range of water use is uncertain, and industry projections do not account all of the ancillary uses of water, like power generation, refining, or reclamation, even the most optimistic numbers for a water-to-oil ratio are high enough to give pause. No matter what ratio of barrels of water to barrels of oil are used for a commercial oil shale and/or tar sands industry in the state, the impacts on Utah's water resources would be extraordinary.

The Strategic Unconventional Fuels Task Force report projects a 250,000-barrel-per-day (bbl/day) tar sands industry in Utah, and a 2.4-million-bbl/day oil shale industry throughout Utah, Colorado, and Wyoming. (Utah has most of the tar sands and about 16% of the oil shale; Colorado has most of the oil shale.) Based on data in this report, a model of the impact of a 634,000-bbl/day industry in Utah, which includes both tar sands and oil shale, was developed. Assuming a mid-range of 3:1 of bbl/day water to oil, a commercial tar sands and oil shale industry producing 634,000 bbl/day would require approximately 90,000 acre-feet per year.

In June 2006, the National Energy Technology Laboratory (NETL) estimated that an aboveground, retort facility producing one million barrels of oil per day would consume up to 240,000 acre-feet of water per year,[13] which translates to more than 150,000 acre-feet per year for Utah's projected industry of 634,000 bbl/day.[14]

These numbers do not include all of the water requirements. The Bureau of Land Management's 2008 Programmatic Environmental Impact Statement concluded that in order to "upgrade" tar sands for transport to a refinery, it will require another 20 barrels of water per barrel of oil.[15] Because upgrading is necessary for transport, this water use will necessarily take place onsite in Utah.[16]

3.2.7. According to the State Engineer:

> To illustrate the availability of water on the Green River, there are approximately 139 approved water rights for irrigation, municipal, or industrial use from the Green River with points of diversion located between the confluence of the Price River and the confluence with the Colorado River. The total of water rights that consume all or part of the water diverted in this segment of the river are approved to divert approximately 400 cfs or 125,000 acre-feet of water. The estimated total depletion from these diversions is 56,500 acre-feet.

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[13] Melissa Chan et al., *Emerging Issues for Fossil Energy and Water: Investigation of Water Issues to Coal Mining, Coal to Liquids, Oil Shale, and Carbon Capture and Sequestration*, June 2006, report prepared for U.S. National Energy Technology Laboratory, DOE/NETL-2006/1233. http://www.netl.doe.gov/technologies/oil-gas/publications/AP/IssuesforFEandWater.pdf.

[14] Fossil Foolishness, Utah's Pursuit of Tar Sands and Oil Shale," Western Resource Advocates, 2010, p. 13.

[15] U.S. Bureau of Land Management, *Proposed Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement*, Vol. 2, September 2008, Table 5.1.2-1, see also Table 5.1.1-1 for surface mining. http://ostseis.anl.gov/documents/fpeis/volumes/OSTS_FPEIS_Vol_2.pdf.

[16] "Fossil Foolishness, Utah's Pursuit of Tar Sands and Oil Shale," Western Resource Advocates, 2010, p. 13.

Based on the fact, however that a diversion of 400 cubic feet per second (cfs) is actually 289,785.7 acre-feet, not 125,000 acre-feet and a diversion of 125,000 acre feet is 173 cfs, not 400 cfs, the SE's basis for his conclusion that sufficient water is available in the Green River for the water right is incorrect. In fact, The Utah Board of Water Resources holds the largest approved but unperfected Utah water right on the Green River, which it received from the federal government in 1996.[17] The right originally constituted nearly 450,000 acre-feet of water stored in the Flaming Gorge Reservoir; however, today, only approximately 299,684 acre-feet remains after some of it has been "segregated," or promised to specific users.[18] Similarly, the SE concludes that current depletion with the return of agricultural water half of is 56,500 acre feet (78 cfs) and the BCH withdrawal would, therefore, double depletion at Green River, but then fails to analyze situation during low flow conditions.

3.2.8. The mathematics of the law of the river, however, simply have never not worked because the sum of the parts is greater than the whole. In 1924, just two years after the Colorado River Compact was signed, a government hydrologist calculated that the actual flow of the river was 10 percent less than the Compact negotiators had assumed. While prior to 1990, water engineers estimated that the river's reliable flow was actually from 14-25 percent less, water managers in Utah put those reports on the table and went back to saying there is a lot of water. As in the case of the water right

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[17] Utah Division of Water Rights, Water right print out 41-3479 (A30414d), accessed December 21, 2009. http://nrwrt1.nr.state.ut.us/cblapps/wrprint.exe?wrnum=41-3479.

[18] *Id*. A segregation is the division of a water right or an application for a water right into two or more legal parts. Although the State Engineer must grant segregation applications, such a grant does not confirm the validity of the water right or extend the deadline to perfect the application. Utah Code Ann. § 73-3-27.

applications in this case, this false since of security about water availability allowed the state to accommodate the growth spurt that occurred for at least for the next 35 years. Although severe droughts had left their mark hundreds of years back in the paleologic record, the 20th century was abnormally wet. Consequently, what water managers think of as normal is, in fact, unnaturally wet compared to the much longer lifetime of the Colorado River.

3.2.9. The Orders continues this false-sense of security related to water availability by finding that the beneficial use doctrine should be taken to it's extreme. According to the Orders:

> The State Engineer cannot rule out the possibility that curtailment may be necessary in the future but notes that, whether implementation of curtailment procedures is the result of hydrologic factors or increases in water use, its implementation would be a reflection that Utah is placing to beneficial use the maximum amount of water possible under the Law of the River. The State Engineer believes that result is consistent with Utah statutory objectives and water policies.[19]

Not only is this conclusion contrary to state law which requires sufficient unappropriated water for the proposed appropriation,[20] but it could result in major hardship to existing water users. This is based on the fact that, if the river drops, the power plant would likely have rights to what remains of Utah's allocation under the Compact, placing it ahead of many other water right holders in southern Utah.

In fact, as illustrated by the Orders, water needs in Utah are increasingly clashing with reality. The state has already doled out 180,000 rights to tap rivers and dig wells,

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[19] Order at 4.

[20] Utah Code Ann. § 73-3-8(1)(a)(i).

but there is not enough water to honor them all. Although, as in this case, publicly the state's water managers tend to adhere to a policy that under the terms of the interstate treaties that govern the river, Utah still has plenty of left to develop, the water supply Utah thought it had is simply not there. Before authorizing additional water withdrawals, therefore, the State Engineer must conduct an adequate analysis of just how much water is left for Utah. Until recently, the thought has been that states like Utah would have enough water supply from the River so that it could continue to grow another hundred years.

3.2.10. Equally surprising is the State Engineer's conclusion that:

> Utah has and will continue to meet its Compact obligations on the Colorado River. The approval of this change application does not guarantee the applicant water in the future except as may be available to the applicant Under the priority date of the water rights underlying this application.[21]

Regardless of the fact that BCH "acknowledges the prior water rights of existing water users and believes they will be respected as the Blue Castle Project is developed"[22] or that the power plant in question (Plant) could go "off-line" if there is an indication that senior water rights would be affected, it is extremely unlikely that BCH—the company operating the Plant—will simply shut down a nuclear reactor or other aspects of the power plant and, equally unlikely to shut off the water needed to operate the Plant, including that needed to avoid a reactor core meltdown. As a result, during times of water shortage, for which there will be increasing occurrences as the years get dryer, existing water right holders and in-stream flows needed for aquatic species will be cut off

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[21] Order at 4.

[22] District's Response p. 8.

on multiple occasions, as the Plant operations will, in most cases, take priority.

3.2.11. It appears, therefore, that the State Engineer has decided to issue the water rights for the power plant regardless of the law and at all costs, including the fact the plant's water diversions could cause state water courts to cut off existing water users once Utah exceeds its allocation under the Colorado River Compact. This is illustrated by the State Engineer's admission that he is willing to sacrifice other water users and in-stream flows for fish to authorize the water diversion for the Plant by stating "[e]ven though under curtailment conditions water rights will be administered based on priority, the possibility that rights might be curtailed is not a reason to deny this application."

3.2.12. The State Engineer's Orders state:

> If all of the existing approved or certificated rights were currently in use, the total depletion to the Green River would be about 1.29% of the volume measured at the Green River station. However, almost all of these depletions occur above the USGS Green River station and represent depletions of water additional to the volumes of water measured there. Although flows less than 500 cfs have been measured at the Green River gauge, it has never been necessary to regulate Green River water rights by priority.
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> The additional depletion of water from the Green River to supply this project would be about 1.22% of the annual mean volume of the river using data from the USGS Green River station.[23]

Here the State Engineer considers only the average percentage of depletion, rather than percentages during low-flow conditions. Under very low-flow conditions the existing depletion of 78 cfs, plus the approved depletion of 75 cfs, would be 30% of a 500 cfs flow and 40% percent of 380 cfs (Lowest Daily Mean Discharge, December 5,

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[23] Orders at 5 and 6.

1934).[24]

The State Engineer failed to identify and assess the factors that could impact the availability of an adequate water supply for the proposed use—over the full life of the project. The State Engineer did not consider the fact that summer agricultural use comes at same time as higher water use to cool the reactor and potential low-flow conditions. Additionally, the State Engineer did not assess the potential impacts of freezing and ice on water availability.

The State Engineer should have assessed the availability of water under low-flow conditions and the various factors that would impact water flow and conflicting demands during low-flow conditions.

3.2.13. The Applications do not contain information regarding how long the water is needed for the purpose of use. A nuclear power plant usually has an operating life from 20 to 40 years. It can take up to 20 years to go through the licensing and construction phase. Early Site Permit is good for up to 20 years and can be extended for another 20 years before initiating construction. BCH current estimate for the reactor becoming operational is 2021 or 2022.[25] After the operating life of the reactor, there is the period of reactor shut down and decommissioning, with the possibility of on-site storage of spent fuel for many years. This easily adds up to over 100 years for the life of the proposed project. The approved water rights, with or without use, can be tied up for that length of time.

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[24] Updated Report: Preliminary Site Consultation, McCallum-Turner, November 20, 0009, p. 3.
[25] Statement by Reed Searle, BCH, on KUST radio, February 1, 2012.

The State Engineer erred in not considering the availability of water over the next 100 years, at a minimum.

3.2.14. The State Engineer must consider the Colorado River Basin Water Supply and Demand Study technical updates, Phase 2, 3 and 4 reports, and the final Study targeted for completion in July 2012.

3.2.15. The Nuclear Regulatory Commission (NRC) has existing guidance on the siting of a nuclear reactor: "General Site Suitability Criteria for Nuclear Power Stations," Regulatory Guide 4.7, Revision 2, April 1998.[26] The NRC has also has a proposed Revision 3 to Regulatory Guide 4.7 (Draft Regulatory Guide DG-4021)[27], which is currently available for public comment.[28] Both Regulatory Guides include the water availability as a factor in siting a nuclear reactor. Draft Reg. Guide DG-4021 states (pages 9-10), in pertinent part:

> The availability of essential water during periods of low flow or low-water level is an important initial consideration for identifying potential sites on rivers, small shallow lakes, or along coastlines. Both the frequency and duration of periods of low flow or low water level should be determined from the historical record and, if the cooling water is to be drawn from impoundments, from projected operating practices.
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> Streamflow records might not cover a sufficiently long period to encompass major droughts or the probable minimum flow for the region. Statistical techniques may be used to extend and complement the period of record to help identify the expected minimum low flow for the region. The U.S. Geological Survey hydrologically based 7Q10 low-flow condition from regional streamflow historical records can be used for screening-level analysis. This statistical method is based on selecting and identifying an extreme value as the lowest 7-day average flow in a 10-year period.

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[26] http://www.nrc.gov/reading-rm/doc-collections/reg-guides/environmental-siting/rg/04-007/

[27] http://pbadupws.nrc.gov/docs/ML1023/ML102380302.pdf

[28] 76 Fed. Reg. 82201, December 30, 2011. http://regulations.justia.com/regulations/fedreg/2011/12/30/2011-33577.html

> There is a 65-percent chance that a 7Q10 minimum flow will occur in any 10-year period. If the 7Q10 is too low to supply adequate water for the plant, then other sources of water for nonsafety-related and safety-related structures and ultimate heat sink requirements would need to be identified. See References 30 and 31[29] for hydrologic frequency analysis applied to regional stream gauges with sufficient record lengths to represent expected minimum flows.

The State Engineer should have calculated the 7Q10 low-flow conditions, not just using data from the most recent 10-year period, but using all historical stream-flow data, to calculate expected minimum flows over the next 100 years.

3.2.16. The NRC also uses other site selection criteria relevant to the availability of water for a nuclear reactor project. The NRC has referred BCH and their contractors to The NRC also referred to *Siting Guide: Site Selection and Evaluation Criteria for an Early Site Permit Application*; Electric Power Research Institute (EPRI); No. 1996878; March 2002.[30] This siting guidance provides site selection criteria for cooling water supply and ties the criteria to the NRC regulatory requirements. For example, the Siting Guide states: "Evaluations of the ability to supply the facility water requirements must take such allocations for other uses into account. For an ESP, this would require projections of use and consumption into the future not only at the initiation of operations but through the operating period as well (up to 65 years)."[31] The Siting Guide also provides: "The evaluation of water supply adequacy involves the comparison of (1) site

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[29] 30. Bedient, P.B., W.F. Huber, and B.E. Vieux, *Hydrology and Floodplain Analysis*, Fourth Edition, Prentice Hall, Upper Saddle River, NJ, July 2007.
31. Riggs, H.C., Book 4, "Hydrologic Analysis and Interpretation," Techniques of Water-Resources Investigations, U.S. Geological Survey, Washington, DC, 1972.[23]

[23] http://pubs.usgs.gov/twri/

[30] http://www.uraniumwatch.org/bluecastle.earlysitepermit/EPRI_SitingCriteria_1006878.020331.pdf

[31] Id. at 3-10.

supply characteristics associated with low-flow conditions as modified by other use allocations as projected into the period of facility operations with (2) the design basis facility water consumption rate."[32]

The State Engineer failed to adequately assess and consider the "water supply for the life of the operation and the water supply during low-flow conditions as modified by other use allocations as projected into the period of facility operations," including the possible 40-plus years ESP time period plus additional time to obtain a combined license and construct the reactor.

3.2.17. The State Engineer must consider the work by the Green River Water Acquisition Team[33] and the Team's final models in order to assess the water flow and withdrawal scenarios and impacts.

3.3. Climate Variability

3.3.1. According to the State Engineer:

> Climate projection models appear to predict a wide range of future climate conditions. Predictions from current models range from a slight increase in Colorado River Basin precipitation to a greater than 30% decrease in annual runoff. The State Engineer is not aware that any available predictive model has been scientifically validated as a definitive predictor of future conditions.[34]

This ignores volumes of documentation illustrating that adding climate change to the equation will almost certainly result in a decrease in average flows for the Colorado River. The desert Southwest is facing the slow reduction of the water supply upon which the region has been built. According to a report on the current availability of water in

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[32] Id.

[33] http://www.waterrights.utah.gov/distinfo/colorado/GRUWAT.asp

[34] Orders at 3.

Utah by the Utah League of Woman Voters:

> Most of Utah's usable water comes from snowpack. The state's system of reservoirs fills in late spring and early summer from the slow snowmelt. The water level in the reservoirs starts to be drawn down beginning in late summer, through the rest of the year and into the next spring. The system depends upon a substantial snowfall and the timing of the spring snow melt. Little snow or more precipitation falling as rain does not allow for timely storage in Utah's high mountain reservoirs or for efficient seasonal allocation. If Utah has a hotter and drier climate, there will be less water in any form, a smaller snowpack, and probably higher human usage to counter the hotter, drier weather. Even if Utah were to be warmer but wetter, there are problems. More precipitation will fall as rain rather than snow, filtering through the ground to our aquifers not to our reservoirs, where it is more accessible to the water delivery system now in place. The smaller snowpack will melt early, and, since Utah receives little summer moisture, it is likely that summer water use will still be high and long.[35]

3.3.2. Rising temperatures associated with global climate change "are expected to change the mix of precipitation toward more rain and less snow. Such precipitation shifts would affect the origin and timing of runoff, leading to less runoff from spring snowmelt and more runoff from winter rainfall, particularly in high-latitude or mountainous areas."[36] These changes could significantly lower summer streamflows. The state's water supply, therefore, is so close between supply and demand that a long period of 80- or 85-percent years will bankrupt the system.

3.3.3. A recent joint publication of the U.S. Geological Survey (USGS) states:

> Potential climate change impacts affecting water availability include changes in precipitation amount, intensity, timing and form (rain or snow); changes in snowmelt timing and changes to evapo-transpiration…. The prudent use of reservoir storage, as well as conjunctive surface water and

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[35] League of Women Voters of Utah Water Study, September 2009, p. 2-3, citing (Spr. Runoff Conf, 2009, Drought in Utah 2007).
http://www.lwvutah.org/AirWaterIssues/lwvutWaterStudy_10-10-19.pdf

[36] Changes in Snowmelt Runoff Timing in Western North America Under a 'Business as Usual' Climate Change Scenario; Iris T. Stewart, Daniel R. Cayani, and Michael D Dettinger.
http://meteora.ucsd.edu/cap/stewart_clch.pdf

> ground water management are strategies that water managers employ to optimize water availability." Therefore: Because climate change is traditionally detected over a period that spans multiple decades (Intergovernmental Panel on Climate Change, 2007), decisions with application horizon greater than 20 years might reasonably be informed by climate change information. Examples of such decisions include general planning studies exploring feasibility, economic benefits and costs, and estimation of risks to decide alternative actions, infrastructure or long-term operations criterion; expected benefits and impacts of proposed actions; environmental conditions and aquatic species likely to be affected by proposed actions; etc.[37]

Further, nuclear power plants are generally licensed for 40 years; thus, according to the above statement by the USGS, planning for nuclear power plant water **c**onsumption can reasonably be informed by looking at climate change information.

3.3.4. Additionally:

> Scientists and most water managers agree that global warming will bring higher temperatures to all of Utah…there is a consensus that Utah is destined to be hotter [and] A warmer climate will have serious consequences for a state that depends upon snowpack to create a reliable and easily stored water supply.[38]

Several recent statistical and empirical studies, as well as climate model studies, show a reduction in runoff to the Colorado River, primarily due to increasing evapotranspiration and decreasing precipitation. The magnitude of the reduction from these studies is within a 10% to 30% range over the next 30 to 50 years. For example, a 2005 paper by authors from the USGS demonstrates that an "ensemble of 12 climate models," which accurately simulated changes in streamflow over the twentieth-century,

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[37] Intergovernmental Panel on Climate Change, Application of Climate Information and Predictions in Water Sectors; Capabilities, K.D. Sharma & A.K. Gosain, p. 5-6 (2009). (Draft White Paper).

[38] League of Women Voters of Utah Water Study, September 2009, p.2.

predicted "10-30% reductions in runoff in … mid-latitude western North America by the year 2050."[39] Such a change in streamflow could portend drastic changes in the ability to manage the Colorado River system, especially in terms of the state's ability to store water in Lake Powell and Lake Mead. For instance, assuming a 10% to 30% reduction in runoff by 2057, two authors from Scripps Institution of Oceanography found in a 2008 paper that, "storage [in Lake Powell and Lake Mead] will be depleted completely 23-40 years from now, or sometime in the span 2030 to 2047."[40] Allowing for historical variability in river flow, in addition to a 20% reduction in runoff by 2057, the "probability of depleting both reservoirs' live storage is 50% by 2028." Alarmingly, the only "shortage option" that appeared to significantly lengthen the viability of Lake Powell and Lake Mead storage was a 25% reduction in water deliveries.[41]

3.3.5. Although the Utah Department of Water Rights has handed out paper rights to an additional 1.1 million acre-feet or water, if Utah develops just 360,000 more acre-feet of Colorado Basin water, it will hit its limit under the Colorado River Compact. Once that limit is reached, the state will have to ration water by priority date across the state. In that context, water for the nuclear reactor would have dramatic impacts on the Green and Colorado Rivers since it would be entitled to a seventh of the water Utah has left under the Compact. Worse, adding water diversions for energy development could cause state water courts to cut off existing water users once Utah exceeds it's allocation

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[39] USGS, Climate Models, Understanding global shifts in water availability: http://water.usgs.gov/nrp/highlights/streamflow.climate.html.

[40] "When will Lake Mead go dry?," Tim P. Barnett and David W. Pierce, Scripps Institution of Oceanography, University of California San Diego, La Jolla, CA, 92037, USA, p. 11-13, January 23, 2008. http://wwa.colorado.edu/admin/announcement_files/2121-uploaded/announcement-2121-6342.pdf

[41] *Id.*

under the Compact or otherwise force the state to choose between new industrial uses of water over existing agricultural, recreational and aquatic resources.

3.3.6. The applicant should be required to demonstrate, with high confidence, that such climatic changes will not significantly impair the nuclear power plant's ability to operate over its 40-year operational license, as compared to current capacity factors across the US (91.8% capacity factor as of 2007); otherwise, the State Engineer should conclude that sufficient water is not available for the Plant and the Change Applications should be rejected by the State Engineer.

3.4. Section 73-3-8(1)(a)(i) — Existing rights and More Beneficial Use of the Water

3.4.1. According to the State Engineer:

> The applicant indicated that the proposed points of diversion for this project are located downstream from all major diversions on the Green River and cannot physically interfere with the majority of water rights on the river. As for the few water rights located below the project, the applicant believes there is sufficient flow in the river to preclude interference with those rights.[42]

Similarly, the State Engineer claims that "[a]ll water rights on the Green River with priority dates earlier than January 15, 1964, are therefore senior in time to this right and are entitled to receive a full allocation of water prior to the applicant receiving any water under this right."[43] The State Engineer, however, admits that this a transferred water right by stating as in this case "when considering a change application, it is not to be rejected for the sole reason that the change would impair a vested right." And, "A change

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[42] Order at 7.

[43] *Id*. at 8.

application may be approved with conditions designed to mitigate impairment or provide compensation to the affected party…."

3.4.2. Based on the fact that the original point of diversion for the transfer request is near Lake Powell and the new point of diversion will be near Green River, the Transfer would result in water being moved up stream hundreds of miles. Thus, prior to issuing the approvals of the Applications, the State Engineer must determine whether water being diverted under the Transfer will impact multiple existing water rights on the Colorado and Green Rivers. This includes a determination of the impact to the flow through a written accounting to determine whether the appropriation can be made without injuring senior water rights or in-stream flows. Such determination must include information on the number of senior and junior water users that have either physical or on paper water rights in the area between the original and proposed points of diversion, the nature of such rights and the amounts of each water right.

3.4.3. Similarly, the State Engineer claims that "[s]hould curtailment under the Compact be necessary, this application, like all others in the Colorado River Drainage in Utah, is subject to priority distribution."[44] This conclusion is similar to the Applicants' claims that "prior water rights of existing water users and believes they will be respected as the Blue Castle Project is developed",[45] or that the power plant could go "off-line" if there is an indication that senior water rights would be affected. It is, however, extremely unlikely that to operator of the Plant would simply shut down a nuclear reactor or other

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[44] *Id*. at 5.

[45] "Response by Kane County Water Conservancy District and San Juan Water Conservancy District to Supplemental Protests; Change Applications a35402 (89-74) and a35874 (09-462)," June 2, 2010, p. 8.

aspects of the power plant and, equally unlikely to shut off the water needed to operate the Plant, including that needed to avoid a reactor core meltdown. In fact, according to the State Engineer, "BCH asserts that there is no Nuclear Regulatory Commission (NRC) requirement to constantly withdraw water from the river and that the only regulatory requirement related to this issue is to have water available for all types of operations, including for safe shutdown and cooling of the plant."[46] As a result, regardless of the State Engineer claims to the contrary, during times of water shortage, for which there will be increasing occurrences as the years get dryer, existing water right holders and in-stream flows needed for aquatic species will be cut off on multiple occasions as the power plant operations will, in most cases, take priority.

3.4.4. The State Engineer states, "[w]hen considering a change application, it is not to be rejected for the sole reason that the change would impair a vested right. A change application may be approved with conditions designed to mitigate impairment or provide compensation to the affected party…."[47] This, however, is directly contrary to Utah Court precedent which provides that, "[i]f the evidence produced by a protestant is compelling enough to undermine the reasonableness of the assertion that the proposed change will not impair vested rights, the state engineer should reject the application seeking to effect that change."[48] Prior to approving the Change Applications, therefore, the state must provide and consider information regarding the amount of unappropriated

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[46] Order at 5 (emphasis added).
[47] *Id*. at 7.
[48] *Searle v. Milburn Irr. Co*., 133 P.3d 382, 396 (Utah 2006).

water available, the impracticality of the Plant going "off-line," and the long-term availability of water in the Green River to satisfy all water appropriations.

3.4.5. The Orders state:

> Providing for the energy needs of the state is one of four top priorities of Governor Gary Herbert. In the Governor's 10-year strategic energy plan, it is pointed out that Utah has the nation's only operating uranium mill 'and job growth in that sector of the economy could be enhanced by construction of a nuclear power plant in the state.[49]

The State Engineer has no information that would support the assumption that the proposed nuclear reactor would provide energy for the State of Utah. Utah has a number of public utility companies, both large and small. No information was provided by the Applicants to document that any Utah utility was interested in, or has committed to, participation in the Blue Castle Project or intends to purchase electricity from, or a share in, the Blue Caste Project in the future. TPD approached at least two Utah utilities, requesting some level of participation in the Blue Castle Project.

3.4.6. TPD approached the Utah Municipal Power Agency (UMPA) in 2009 regarding participation in the Blue Castle Project.[50] *See* Exhibit H. UMPA is a consumer owned corporation, established for the purpose of developing a reliable and economic power supply program to meet all the requirement electric power and energy needs of its member municipalities in Utah.[51] UMPA did not sign any participation agreement with

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[49] Orders at 9.

[50] Electronic Communications between Leon Pexton (UAMPS) and Aaron Tilton (TPD/BCH), May and December 2009.

[51] http://www.umpa.cc/

either TPD or BCH. UMPA was also approached by UniStar[52], at the time a partnership of Constellation Energy[53] and the French company, EDF Group.[54] UniStar was interested in a joint venture with local utilities to site a nuclear reactor in the Great Basin area. UniStar presented themselves as a single source to license, build, and operate a fleet of standardized power plants. They pursued UMPA intensely and wanted UMPA to sing a Participation Interest Agreement. In the end UMPA decided not to sign an agreement with UniStar,[55] and Constellation Energy dropped out of the partnership, making UniStar (now a wholely owned foreign company) ineligible for an NRC reactor license. UMPA is currently working on an update of their Integrated Resource Plan to determine future resource needs of UMPA and its membership. UMPA's 2010 Manager's Report[56] states: "During the year the Agency evaluated nuclear generating options. The Board concluded that nuclear generation was not a viable option at present but would continue to monitor the option for future consideration." The 2011 Manager's Report[57] makes no mention of involvement in any future nuclear power project.

3.4.7. BCH also approached the Utah Associated Municipal Power Systems (UAMPS). UAMPS is a "governmental agency that provides comprehensive wholesale electric energy, on a nonprofit basis, to community-owned power systems throughout the Intermountain West."[58] UAMPS represents 45 Members in Utah, Arizona, California,

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[52] http://www.unistarnuclear.com/
[53] http://www.constellation.com/energymatters/nuclear/pages/nuclearoverview.aspx
[54] http://www.edf.com/the-edf-group-42667.html
[55] UMPA Board Meeting Minutes, February 25, 2010.
[56] This document is no longer on the UMPA website.
[57] http://www.umpa.cc/about/managers-report/
[58] http://www.uamps.com/

Idaho, Nevada, New Mexico, Oregon and Wyoming. UAMPS did not agree to participate in the Blue Castle Project.[59] UAMPS was also approached by UniStar and participated in an initial feasibility analysis with UniStar. UAMPS decided not to participate further in the UniStar project, in part because the costs to UAMPS for electricity from a nuclear power project would be higher that the costs to produce or purchase electricity elsewhere.

3.4.8. Uranium Watch has contacted other Utah electrical utilities to determine if they had been approached by TPD and/or BCH to participate in the Blue Castle Project. One representative of a utility would not provide information. Representatives of the other small public and cooperative utilities stated that they had not been approached by TPD or BCH.[60] PacifiCorp,[61] which operates as Rocky Mountain Power in Utah, is the primary electrical power provider in Utah. PacifiCorp also provides generation interconnection services and/or transmission services under the Open Access Transmission Tariff. PacifiCorp has no plans to participate in the Blue Castle Project or other nuclear power generation project in Utah.[62] PacificCorp has not been approached by BCH regarding the provision of power for the construction and operation of the reactors and/or transmission of power from the reactors. No transmission feasibility studies have yet been conducted.

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[59] Personal Communication with Doug Hunter, General Manager, UAMPS

[60] Personal Communication with Empire Electric, Intermountain Power Agency, and South Utah Valley Electric Service District.

[61] http://www.pacificorp.com/index.html

[62] Personal Communication with PacifiCorp staff.

3.4.9. Utah public utilities prepare long-range plans and annual reports that are publicly available. They hold meetings that are open to the public and produce minutes of their Board meetings. Many of them are subject to the Utah Government Records Access and Management Act. No documents were placed on the record of this proceeding or produced by an investigation of the State Engineer that shows that any Utah public utility has committed to or would, in the future, participate in the Blue Castle Project. The Project is a decade, if not decades, in the future. The costs of the project and the costs to purchase the electricity it would produce are unknown. Also, the availability and costs of other energy sources over the next decades in Utah have not been evaluated.

3.4.10. The State Engineer failed to evaluate the beneficial use of water for river recreation and impact of withdrawal of water during low-flow scenarios on the river level and recreational boating activities on the Green River, below the point of diversion. Recreation on the Green River is a major part of the economy of Green River and a significant aspect of the economy of Moab and Grand County. The potential economic impacts if this beneficial use is curtailed were not evaluated by the State Engineer. The impacts to river recreation of the approved diversions during summer low-flow scenarios and the impacts of the diversion and pumping structures were also not evaluated. Therefore, there is no basis for the conclusion that the Applications will not interfere with a more beneficial use of water for river recreation.

3.4.11. The State Engineer failed to evaluate potential of the approved diversions to interfere with the maintenance of the river ecology and the necessity to protect and enhance the recovery of endangered and threatened fish species. Maintenance of the river

ecology and the protection and recovery of endangered and threatened fish species are currently a significant beneficial use of the water flowing in the Green River near the approved points of diversion and downstream. Therefore, there is no basis for the conclusion that the Applications will not interfere with a more beneficial use of water for the maintenance of river ecology and the protection and recovery of endangered and threatened fish species.

3.5. Section 73-3-8 (l)(a)(iii) — Physical Feasibility

3.5.1. The Orders state:

> BCH submitted information indicating it believes it can qualify to receive an Early Site Permit (ESP) under current NRC licensing rules. BCH stated that it has satisfied NRC information for the pre-application period for process and scheduling, and continues to work towards meeting statutory requirements. BCH believes it has the right and capability to apply for an NRC license, and specifically for an ESP.[63]

There is no substantive documentation on the record of this proceeding that supports the conclusion that BCH can qualify for an ESP. The State Engineer did not reference any specific information that BCH submitted that demonstrates that BCH can qualify for an ESP. The State Engineer did not reference any independent analysis by the State Engineer or others regarding whether BCH can qualify for an ESP.

3.5.2. The NRC has specific requirements for the information that must be provided in an ESP application.[64] This includes technical information[65] and an Environmental

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[63] Orders p. 10.

[64] http://www.nrc.gov/reading-rm/doc-collections/cfr/part052/

[65] http://www.nrc.gov/reading-rm/doc-collections/cfr/part052/part052-0017.html

Report.[66] The "Environmental Report—Early Site Permit Stage" must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed.[67] As discussed herein at Section 3.2.15 (above), NRC Reg. Guide 4.7[68] currently provides criteria for assessing site suitability, including an assessment of alternative sites. According to Reg. Guide 4.7: "This guide discusses the major site characteristics related to public health and safety and environmental issues that the NRC staff considers in determining the suitability of sites for light-water-cooled (LWR) nuclear power stations." Reg. Guide 4.7 discusses a number of safety and environmental criteria:

> The safety issues discussed include geologic/ seismic, hydrologic, and meteorological characteristics of proposed sites; exclusion area and low population zone; population considerations as they relate to protecting the general public from the potential hazards of serious accidents; potential effects on a station from accidents associated with nearby industrial, transportation, and military facilities; emergency planning; and security plans. The environmental issues discussed concern potential impacts from the construction and operation of nuclear power stations on ecological systems, water use, land use, the atmosphere, aesthetics, and socioeconomics.

The Applicants submitted an 8-page technical report regarding site suitability[69] as testimony at the January 12, 2010, hearing. The McCallum-Turner report was a preliminary evaluation that assessed flooding potential, water availability, nearby hazardous land uses, and geology/seismology. The Applicants did not submit any independent analysis of meteorological characteristics (including atmospheric extremes and dispersion), exclusion area and low population zone, population considerations,

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[66] http://www.nrc.gov/reading-rm/doc-collections/cfr/part051/part051-0050.html
[67] 10 C.F.R. 51.50(b)(1).
[68] http://www.nrc.gov/reading-rm/doc-collections/reg-guides/environmental-siting/rg/04-007/
[69] Updated Report: Preliminary Site Consultation, McCallum-Turner, November 20, 0009.

potential effects from accidents associated with nearby railroad and interstate transportation routes, emergency planning, security plans, socioeconomics, noise, and fission retention and transport. There was no independent analysis of the impacts to air quality, water quality, ecological systems and biota (including fisheries, wildlife, vegetation, and threatened and endangered species), and land use and aesthetics.

The proponents of the nuclear reactor project should have completed a full preliminary site suitability analysis a long time ago, but did not. Therefore, the State Engineer did not have, or request, a genuine site suitability analysis on which to base a determination that the proposed site was suitable for a nuclear reactor project and eligible for an ESP.

3.5.3. An example of a site suitability criteria that was not analyzed is the impacts of local fogging and icing. Green River is subject to winter inversions and severe local fogging and icing because of local atmospheric conditions. This would be exacerbated by water vapor discharged into the atmosphere from cooling towers and water storage and evaporation ponds. According to Reg. Guide 4.7, these "impacts are generally of greatest potential importance relative to transportation or electrical transmission systems in the vicinity of a site." This site suitability problem was not considered by the State Engineer.

3.5.4. The NRC referred to the need for BCH to evaluate alternative sites and address site suitability criteria in a trip report for the October 4-5, 2011, Pre-Application Readiness Assessment Visit.[70] The Trip Report states:

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[70] http://www.uraniumwatch.org/bluecastle.earlysitepermit/nrc_bcp_triprpt_111002.111215.pdf

> The NRC staff asked for an overview of the site selection process used to identify the Blue Castle Project site as the proposed site. There was considerable discussion on the screening process. The staff suggested that additional explanation of the screening criteria and how they were employed to identify the proposed site and the slate of alternative sites would be needed for the ESP review. The methodology for site selection was based on the approach outlined in the Siting Guide: Site Selection and Evaluation Criteria for an Early Site Permit Application; Electric Power Research Institute (EPRI); No. 1996878; March 2002. The guide allows for weighting factors to be applied to the individual criteria on a project-specific basis.[71]

The NRC also referred to *Siting Guide: Site Selection and Evaluation Criteria for an Early Site Permit Application*; Electric Power Research Institute (EPRI); No. 1996878; March 2002.[72] This siting guidance provides extensive information about the siting of nuclear reactors. Neither the Applicants, BCH, or the State Engineer did the kinds of analyses required by the NRC for evaluating the suitability of the site for a nuclear electrical generation station.

3.5.5. The State Engineer failed to assess the feasibility of constructing intake structures and pumps in the narrow area the State Engineer approved as the points of diversion for the subject water use.

3.5.6. The State Engineer failed to assess the feasibility of piping the water from the Green River to the proposed site.

3.5.7. In sum, the State Engineer and the Applicants did not demonstrate that the the proposed project was feasible.

3.6. Utah Code Section 73-3-8 (l)(a)(iii) — Economic Feasibility

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[71] *Id*. p. 6.

[72] http://www.uraniumwatch.org/bluecastle.earlysitepermit/EPRI_SitingCriteria_1006878.020331.pdf

The State Engineer determined that the proposed Blue Castle Project is economically feasible.

3.6.1. The Orders[73] state: "BCH believes its projected cost of electricity from this project is competitive and capable of economically meeting new electricity demand requirements for electric utilities." However, no independent, detailed data regarding the projected cost of electricity from the project and the projected costs of other types of electrical generation was submitted by the Applicants. Therefore, there is no reasonable basis for a determination that the Blue Castle Project is economically feasible.

3.6.2. BCH has stated that 50% of the Blue Castle Project power is expected to be used in Utah.[74] A June 29, 2010, BCH News Release[75] (submitted to the State Engineer by counsel for KCWCF and SJCWCD on October 7, 2010)[76] states: "It is anticipated that the resulting 2-3 unit nuclear power plant of 3000 MWe will power about 2.25 homes." *See* Exhibits I and J. Fifty percent of 2.25 million homes is 1,125,000 homes. According to the Energy Information Agency, as of 2010, there were a total of 936,602 residential customers in Utah and 1,068,383 total customers.[77] *See* Exhibit K. According to the PacifiCrop website,[78] PacificCorp had 787,550 customers, as of mid-2010. That leaves 280,833 total customers served by other utilities. From 2008 to

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[73] Orders p. 11.

[74] Power Point Presentation, Blue Castle Project, Blue Castle Holdings Inc., January 12, 2010, Hearing.

[75] Blue Castle Nuclear Power Project Signs $30 Million Private Capital Agreement, Blue Castle Holdings, June 29, 2010.

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[77] 1990 - 2010 Number of Retail Customers by State by Sector (EIA-861). http://www.eia.gov/cneaf/electricity/epa/epa_sprdshts.html

[78] http://www.pacificorp.com/about/co/cqf.html

2010, the average increase in residential customers was 5,900, and the average increase in total customers was 9,500. Assuming that power from the Blue Castle Project supplies half of all residential customers currently supplied by Utah utilities other than PacifiCorp (which does not intend to participate in the Blue Castle Project), at the current rate of residential customer increase, it would take 64 years to develop 1,125,000 Utah residential customers. At the 1990 to 2010 average rate of 18,623 new residential customers per year, it would take about 53 years to develop 1,125, 000 residential customers. Clearly, BCH projections for a large residential customer base in Utah is greatly inflated.

3.7. Utah Code §73-3-8 (l)(a)(iv) — Financial Ability to Complete the Proposed Works

The State Engineer determined that the Applicants, through BCH, has the financial ability to complete the proposed works. According to BCH, completion of the proposed works would involve applying for and receiving an Early Site Permit and later applying for and receiving a combined construction and operation license. BCH estimates that the cost for feasibility studies, licensing and other permitting application and approval processes would cost approximately $110 million. They estimate that the cost for actual construction would be $13 to $16 billion. It is not know it that includes funds required to commence operation, contingency, required bonding, and other costs associated with operation of the reactor and paying back investors.

3.7.1. The State Engineer (page 12), in support of the assertion that BCH (and not the Applicants) has the financial ability to complete the proposed works, determined:

> BCH asserts that it has the ability to finance the project as scheduled under its current step-bystep development program and to date has accrued approximately 3-years of preparation, studies, and strategic business

> development representing millions of dollars in value and investment. BCH presented a table at the hearing showing its capital acquisition schedule through 2015 indicating how BCH would acquire the estimated $100 million for the permitting and licensing phase of the project. BCH stated that a term-sheet for $50 million of investment into the project has been signed with a private equity fund and that existing or in-progress negotiations with utilities represent total commitments of $72 million, or approximately 72% of the needed capital for this stage of development. BCH submitted information indicating it has entered into an agreement with LeadDog Capital L.P. for private equity financing to provide up to $30 million in capital in exchange for Blue Castle common stock. BCH states that the financing for the permit will take place over a 3-year period and term-sheets have been signed with 17 different utilities, representing 4500 Mwe of power.

The State Engineer's financial ability determination was based on several assumptions:

- BCH has the ability to finance the project as scheduled under its current step-by-step development program.
- BCH would acquire the estimated $100 million for the permitting and licensing phase of the project.
- BCH would be able to acquire $50 million of investment, based on a preliminary with a private equity fund.
- Financing for the permit will take place over a 3-year period and term-sheets have been signed with 17 different utilities, representing 4500 Mwe of power.
- BCH has entered into an agreement with LeadDog Capital L.P. for private equity financing to provide up to $30 million in capital in exchange for Blue Castle common stock.

Neither the Applicants nor BCH provided any documentation to support their assertions that BCH had the ability to finance the project. Below is an examination of the assertions the State Engineer relied on.

3.7.2. The State Engineer references a term sheet for $50 million of investment has been signed with a private equity fund. The private equity fund is not named. The

information regarding the $50 million in capital is contained in testimony placed on the record by counsel for the Applicants in June 2010.[79] The testimony provides more information about the $50 million than the 2012 Orders:

> The Blue Castle Project has signed a term sheet for $50 million of investment into the Blue Castle Project with a private equity fund that has cash on hand. Execution of a definitive agreement with this fund is predicated on completing negotiations with utilities for their participation.[80]

A term sheet is a preliminary, non-binding agreement, similar to a letter of intent, that documents two or more parties' intentions to enter into a future agreement based on specified (but incomplete or preliminary) terms.[81] According to the Applicants, the execution of a definitive agreement with the fund is predicated on completing negotiations with utilities for their participation. Therefore, the Blue Castle Project agreement with an unknown entity is 1) non-binding and 2) finalization of the agreement depends upon certain (unknown) levels of participation by various unknown utilities at an unknown future time.

3.7.3. The State Engineer first references "existing or in-progress negotiations with utilities represent total commitments of $72 million, or approximately 72% of the needed capital for this stage of development." The State Engineer goes on to claim, "BCH states that the financing for the permit will take place over a 3-year period and term-sheets have been signed with 17 different utilities, representing 4500 Mwe of

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[79] Response by Kane County Water Conservancy District and San Juan County Water Conservancy District to Supplemental Protests; Change Applications a34401 (89-74) and a35874 (09-462), John H. Mabey, Jr., and David C. Wright, June 2, 2010.

[80] *Id*. p. 10.

[81] http://encyclopedia.thefreedictionary.com/Term+Sheet

power." So, within one paragraph, the term-sheets have gone from the "existing or in-progress negotiation" stage to "term-sheets that have been signed by 17 different utilities."

The statement, "term-sheets have been signed with 17 different utilities, representing 4500 Mwe of power," is an exaggerated, erroneous statement and not reflected by any BCH testimony. BCH stated that the "Blue Castle Project has attracted the interest of over 15 utilities, which would represent 4,500MWe of interest in the project,"[82] and "approximately 70% of the capital sources have already been identified with signed terms sheets and due diligence with 17 current utilities."[83] However, there was no testimony stating that term-sheets have been signed with 17 different utilities, representing 4500 Mwe of power.

The June 2 testimony provides additional information:

> The utilities that could complete agreement with Blue Castle would comprise an additional $22 million in revenues to Blue Castle. The above existing or in-progress commitments would represent $72 million in equity and revenue financing for the project over the next 3-4 years; therefore approximately 70% of the capital sources have already been identified with signed terms sheets and due diligence with 17 different utilities. The negotiations and or due diligence activities are protected by legally binding agreements[,] which include non-disclosure provisions.[84]

Therefore, in testimony provided to the State Engineer, BCH referred to in-progress commitments, term sheets, and due diligence activities with 17 unnamed

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[82] Blue Castle Nuclear Power Project Signs $30 Million Private Capital Agreement, Blue Castle Holdings, June 29, 2010. Exhibit J.

[83] Response by Kane County Water Conservancy District and San Juan County Water Conservancy District to Supplemental Protests; Change Applications a34401 (89-74) and a35874 (09-462), John H. Mabey, Jr., and David C. Wright, June 2, 2010, p. 15.

[84] *Id*.

utilities. This is all very vague. At this time, the State Engineer does not have any information before him regarding: 1) the number of agreements between BCH and any electrical utilities, 2) the nature of those agreements (preliminary or final), 3) the terms of those agreements, 4) the amount of power that would be provided from the Blue Castle Project to fulfill those agreements, 5) the funding that would be provided, 6) the ability of the utilities to obtain such funding, or 7) any other information that would support any claims that one or more electrical utilities are, in fact, committed to participation in the Blue Castle Project. Either party can choose not to execute or finalize a non-binding agreement, as has already occurred with two agreements related to the Project.

Electrical generation and sale is a highly regulated industry. Utilities must go through internal and state and federal regulatory processes to participate in the Project. There is no indication that any publicly or privately held utility in Utah or any other state has commenced such a process with the applicable regulatory authorities with respect participation in the Project.

3.7.4. As discussed herein at Sections 3.4.6 to 3.4.9 (above), TPD approached two Utah utilities in 2009, but neither of those utilities agreed to participate in the Blue Castle Project. Further, any term-sheets that were signed with any utilities could only have been preliminary, non-binding agreements. Such agreements may have been signed with TPD, not BCH. TPD is no longer the lessee of the subject water rights.

3.7.5. BCH has only come forward publicly with information about the results of a negotiation with one utility.[85] This was a non-binding, preliminary agreement with the

[85] http://www.bluecastleproject.com/files/news_items/15-37954062.pdf

Page Electric Utility,[86] a not-for-profit public power entity, owned by the City of Page corporation, for 50 MW of power. There has been no final agreement, because currently there are no transmission lines between Green River and Page, Arizona.[87] The electrical company has not committed any funds to the project.[88]

3.7.6. The State Engineer's decision was based, in part, on the assumption that BCH had an agreement with LeadDog Capital to provide up to $30 million in capital in exchange for Blue Castle common stock. The information was based on the June 29, 2010, BCH News Release. *See* Exhibit J. The News Release states (in part):

> Blue Castle Holdings Inc. (Blue Castle), developer of a planned nuclear power plant projects in Green River, Utah[,] has entered into an agreement with LeadDog Capital L.P. for private financing. The equity financing will be used for the continued development of the proposed new nuclear power plant project. Under the terms of the agreement, LeadDog Capital has committed to provide up to $30 million for private equity financing to provide up to $30 million in new capital in exchange for Blue Castle common stock. The financing will take place in multiple trances over a 3-year period. The schedule for stock purchases is to be established at the sole discretion of Blue Castle.
> ***
> LeadDog Capital L.P. is a private fund based in New York with a focus on private placement investments in microcap companies with market capitalizations under $250 million, through the purchase of various types of securities.

Unlike more sophisticated, knowledgeable, and responsible regulatory agencies, the Division of Water Rights has no criteria associated with the various determinations that the State Engineer must make to support the approval of a water right change application and does not require actual documentation to support various applicant claims. So, a press release, rather than more substantive documentation, was used, in

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[86] http://pageazpower.com/

[87] Personal Communication with Brian Hill, General Manager of Page Electric Utility.

[88] Page Electric Utility, Regular Board Meeting, October 13, 2009. Submitted as testimony by HEAL Utah, March 22, 2011.

part, to substantiate BCH's claims of financial adequacy. The State Engineer did not require BCH to provide documents substantiating the agreement with LeadDog Capital and LeadDog Capital's ability to provide any of the $30 million in capital. The State Engineer does not know if BCH has ever issued common stock, or is legally authorized to do so.

3.7.7. On January 25, 2012, Parties became aware that the U.S. Securities and Exchange Commission (SEC) had initiated an administrative proceeding against LeadDog Capital and its owners and partners for fraudulent and illegal practices and deceiving investors. A December 1, 2011, SEC Press Release[89] and the "Order Instituting Administrative and Cease-and-Desist Proceeding"[90] were readily available on the Internet. Exhibits L and M.

According to the SEC Order, at the time of the BCH news release, LeadDog had only $4.25 million in assets, most of which were illiquid. Therefore, it is highly unlikely that LeadDog would ever have been able to provide $30 million in capital to BCH.

3.7.8. On January 26, 2012, a story about LeadDog Capital and BCH was published in the Salt Lake Tribune.[91] Exhibit K. The article quoted Aaron Tilton, BCH Chief Executive Officer: "Tilton said Thursday he was unaware of LeadDog's problems but added that he never executed the financing agreement."

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[89] "SEC Charges Multiple Hedge Fund Managers with Fraud in Inquiry Targeting Suspicious Investment Returns," U.S. Securities and Exchange Commission, December 1, 2011. http://www.sec.gov/news/press/2011/2011-252.htm

[90] "Order Instituting Administrative and Cease-and-Desist Proceeding," U.S. Securities and Exchange Commission, November 11, 2011. http://www.sec.gov/litigation/admin/2011/33-9277.pdf

[91] http://www.sltrib.com/sltrib/politics/53385458-90/blue-castle-company-decision.html.csp

In March 2011, information had been placed on the record of this proceeding indicating that BCH had not executed any financial agreement with LeadDog Capital and did not intend to do so. The statement was included in the February 28, 2011, Energy Intel's Nuclear Intelligence Weekly,[92] which was submitted to the State Engineer by HEAL Utah (dated March 22, 2010) as supplementary testimony. The NIW article states:

> In June, BCH in June announced that LeadDog Capital, a New York hedge fund, had committed $30 million over three years in exchange for BCH common stock (BCH is privately held), **but Tilton says he hasn't executed the agreement and doesn't need to.** He has another plan: In December, BCH bought Colorado-based Willow Creek, which builds oil and natural gas pipelines. Tilton says Willow Creek will provide enough operational cash flow to finance licensing proccess. [Emphasis added.]

Therefore, as early as February 2011, BCH knew that they had no intention of executing a final agreement with LeadDog to provide capital for the Blue Castle Project. BCH did not inform either the Water Conservancy Districts (Applicants) or the State Engineer of that fact. The June 29, 2010, BCH news release remained on the BCH website until it was removed following the publication of the January 2012 Salt Lake Tribune article. Apparently, BCH does not feel any obligation to provide complete, accurate, and timely information to the State Engineer regarding their ability to finance the Blue Castle Project.

3.7.9. It will cost several billion dollars to complete the proposed works. Neither the Applicants nor BCH have made any claims or provided any documentation to demonstrate that BCH or any other entity has the ability to obtain the estimated $13 to $16 million required to construct and operate the proposed works (that is, the Blue Castle

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[92] http://www.energyintel.com/Pages/About_UIW.aspx

Project). Therefore, the State Engineer has no basis for a determination that the Applicants, through BCH, have the financial ability complete the proposed works.

3.7.10. It has been over a year since the Applicants provided and information about BCH ability to complete just the permitting and licensing phase of the proposed works. Surely, there have been changes in BCH's financial situation: utilities that have been approached have signed agreements of some sort or not signed agreements. The results of BCH's "in-progress negotiations" and "due diligence" should be know by now. However, updated information regarding agreements signed, decisions not to execute final agreements, arrangements to secure capital, the amount of power utilities have committed to, and other pertinent financial information have not been placed on the record.

3.7.11. The State Engineer has authority, pursuant to Utah Code Section 73-3-11, to request a statement of financial ability of applicants. The State Engineer is authorized to request the information documenting the amount of an Applicant's authorized and paid-up capital and other additional information that will enable the State Engineer to properly to guard the public interests. The State Engineer specifically disregarded this aspect of his authority, and did not request any information about BCH's authorized and paid-up capital or other specific financial resources. Instead, the State Engineer relied on unsupported claims and assertions by BCH regarding its financial dealings and resources.

3.7.12. After evaluating the unsubstantiated financial information provided by BCH, the State Engineer concluded:

The statute does not require that an applicant have all of the funds to fully

> construct a project immediately available before the State Engineer approves a water right application. The applicant is a public agency with taxing authority. The lessee of the water and project developer, BCH, is a private company. The applicant, through the lessee, has demonstrated to the satisfaction of the State Engineer an ability to secure funding as needed, on a step-by-step basis, and a plan to continue to capitalize the project sufficient to establish a reason to believe that the applicant has the financial ability to complete the works.

Even if BCH were able to reach the $100 million goal for the licensing and permitting stage, that amount is less that 0.8% of the total required to construct and operate the project, at the minimal cost of $13 billion. That is less than a penny for every dollar required.

Further, BCH underestimated the amount of money needed to complete the combined license process, because at the application stage, the NRC would require specific documentation (and not press releases) to demonstrate that the BCH, a newly-formed entity, has the financial where-with-all to construct and operate the reactors.[93] Therefore, in order to receive a construction and/or operating license, BCH would need to show that they had financial resources complete, operate, and decommission the proposed works, including the funds to pay the KCWCD and SJCWCD for the water that they will be using once the reactor commences operation. That would mean committed financial resources far beyond the $100 million projected to complete the application process for a combined license. Pertinent NRC regulations state:

> Section 50.33. (f) Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought. As

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[93] 10 C.R.R. § 50.33(f).

> applicable, the following should be provided:
> (1) If the application is for a construction permit, the applicant shall submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. The applicant shall submit estimates of the total construction costs of the facility and related fuel cycle costs, and shall indicate the source(s) of funds to cover these costs.
> (2) If the application is for an operating license, the applicant shall submit information that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license. The applicant shall submit estimates for total annual operating costs for each of the first five years of operation of the facility. The applicant shall also indicate the source(s) of funds to cover these costs.
> (3) If the application is for a combined license under subpart C of part 52 of this chapter, the applicant shall submit the information described in paragraphs (f)(1) and (f)(2) of this section.
> (4) Each application for a construction permit, operating license, or combined license submitted by a newly-formed entity organized for the primary purpose of constructing and/or operating a facility must also include information showing:
> (i) The legal and financial relationships it has or proposes to have with its stockholders or owners;
> (ii) The stockholders' or owners' financial ability to meet any contractual obligation to the entity which they have incurred or proposed to incur; and
> (iii) Any other information considered necessary by the Commission to enable it to determine the applicant's financial qualification.
> (5) The Commission may request an established entity or newly-formed entity to submit additional or more detailed information respecting its financial arrangements and status of funds if the Commission considers this information appropriate. This may include information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility.

The State Engineer failed to consider the total amount of funding required to complete the proposed works, the financial resources necessary to receive an NRC license to construct and operate the Blue Castle Project, and the fact that BCH is a newly-formed entity, with no financial or other track record and no experience in the licensing, construction, or operation of a nuclear reactor.

3.7.12. In sum, BCH has not shown 1) that it has the ability to finance the licensing, construction, and operation of the Blue Castle Project; 2) that it would acquire $100 million for the permitting and licensing phase of the project; 3) that it would be able to acquire $50 million of investment, based on a preliminary with a private equity fund; 4) and that it has financing from any electrical utilities. And, BCH has no agreement with LeadDog Capital. Therefore, the State Engineer must reject the application, because the State Engineer cannot support a finding that the Applicants, through BCH, have the required financial ability to complete the proposed works.

3.8. Utah Code Section 73-3-8 (l)(a)(v) — Filed in Good Faith, Not for Speculation or Monopoly

The State Engineer found that the Change Applications were filed in good faith and not for speculation or monopoly. The Orders include information about BCH's claims:

> BCH states that its business model does not entail a strategy of transfer or sale of the NRC licenses but calls for additional utility and merchant participation within the current BCH entity structure. They cite Page Electric Utility as having entered into a Memorandum of Understanding for a purchase of equity in the project. All of the project assets are owned by BCH and Page Electric Utility would become an equity owner of BCH. BCH states it has no plans to transfer the water leases and will be the entity that will put to beneficial use the leased water under the applications.

3.8.1. Although BCH has indicated that their business model would not entail the transfer of the water right leases or NRC licenses, BCH would be able to do so without the permission of the Division of Water Rights. Already TPD's leases with the KCWCD and SWCWCD were assigned to BCH in 2010. *See* Exhibits D and E. The State Engineer was not informed of that transfer, even though the assignment of the water rights to BCH was relevant to these water rights proceedings. BCH could sell its leases

and other assets at any time, without the State Engineer's approval. They can also sublease the water rights that they are not using, without the State Engineer's approval.

Any NRC license can be transferred to another entity due to the sale of the facility. The sale and license transfer must be approved by the NRC. Again, the State Engineer would not have any authority over that transfer. It is also possible that the water rights lessee would eventually be different from the Blue Castle Project NRC licensee.

3.8.2. The State Engineer should have considered conditioning the approval of the change application on the holding of the subject water rights leases by BCH. If the leases were transferred to another entity, that should require a new change application, because Change Applications were unique to BCH's role in the Blue Castle Project.

3.8.3. The State Engineer implies that the transfer of the water rights is a simple transfer of water from a coal-power generation project at Lake Powell to a nuclear power generation project at Green River. This is not so. The proponents of the coal generation project gave up on that project decades ago. Although Water Rights 89-74, 89-1285, and 89-1513 were approved for a coal-fired power plant in 1964, by 2003 the water rights had been assigned to the KCWCD, and the KCWCD had filed a Request of Extension of Time to Show Proof of Beneficial Use. In the extension request, KCWCD claimed that the water would potentially be used for a new upscale subdivision, water intensive projects such as parks, golf courses, and planned unit developments, agriculture, light industrial and service-business development related to retirement community development, and mining of coal. The application concluded that the granting of the extension would "facilitate development prospects of both Kane County and the State of

Utah for the area." By 2003, there was no possibility that the water would be used for a coal-fired power plant. By 2009, the water rights had not been used for the expected housing and recreational development and coal mining in Kane County. So, from 1964 to the present, the KCWCD water right has shifted from one proposed use to another, without ever being put to beneficial use.

3.8.4. As discussed herein at Section 3.7.4 (above), there has been no final agreement or financial commitments by Page Electric Utility. Any equity interest in the Blue Castle Project could be sold and transferred to another entity by BCH.

3.8.5. Speculation refers to speculative enterprises, which can involve chance and are risky or financially unsafe or secure.[94] It can also involve buying land, goods, shares, etc., in expectation of selling at a higher price.[95]

BCH is in the process of acquiring assets and using those assets to acquire additional assets. Those assets eventually may result in the construction and operation of a nuclear reactor. BCH is using some of its financial assets, the water rights leases, and now the State Engineer water rights Change Applications approvals to secure additional financial assets. With enough accumulated assets, BCH may be able to complete the application for the Early Site Permit. If they are able to obtain an Early Site Permit, they may be able to obtain additional financial and other commitments to the Project. Or, they could sell the ESP, or just hold onto it for years before accumulating the required financial commitment and resources to go forward. Then, they might be able to purchase the site for the Project and apply for a combined construction and operating license and

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[94] http://www.thefreedictionary.com/speculative

[95] http://www.brainyquote.com/words/sp/speculation222278.html

other required permits. During the permitting phase, they need a number of permissions and permits from individuals and local, state, and federal entities. Issuance of these licenses and permits may be the subject of administrative and legal challenges. The denial of any one of these approvals would derail or delay the project. As the years go by many things will change, such as the costs of other energy resources, cost to construct and finance a nuclear reactor, availability of credit, nuclear power regulatory requirements, impacts of climate change, decisions by electrical utilities to pursue various sources of electricity to supply their energy needs, the energy needs themselves, and other factors that would effect the viability of the Project.

Everything about this project is based on speculation: speculation regarding future developments, the ability of BCH—a newly-formed entity with no financial or management track record—to secure billions of dollars in financing, the ability of BCH to secure commitments of utilities acquire equity or other interest in the Project; the ability of BCH to secure all of the required permits and licenses, the ability of BCH to use their financial or other asset to secure additional financial and other assets, and the ability of all the ducks to line up in the right order and at the right time. At this time, there are only unsubstantiated claims of BCH's ability to secure less than 1% of funds required for the total Project. Further, at any time, BCH can sell its assets to another entity for a profit (or loss), notwithstanding any of BCH statements otherwise.

There is nothing on the record of the proceeding that demonstrates that the Blue Castle Project is not, intentionally or unintentionally, a speculative project fraught with financial and other risks at every juncture.

3.9. Utah Code Section 73-3-8(1)(b)(i) — Public Welfare/Recreation/Natural Stream Environment

3.9.1. Public Welfare. Utah statute states that if the State Engineer has reason to believe that an application to appropriate water will prove detrimental to the public welfare, it is the State Engineer's duty to withhold approval or rejection of the application until the State Engineer has investigated the matter.

In this proceeding, the State Engineer had information before him that demonstrated that the Change Applications would prove detrimental to the public welfare. The State Engineer failed to consider any of that testimony and conduct a full investigation of the impacts of the Blue Castle Project on the economic, social, environmental, health, safety, and other aspects of the public's welfare. Instead the State Engineer turned the State of Utah's responsibility for consideration of the public welfare in response to a Change Application to the U.S. Nuclear Regulatory Agency. The State Engineer does not cite any authority for this abrogation of his responsibility under Section 73-3-8(1)(b)(i). The State Engineer did not cite any official State of Utah determination that the NRC regulations and NRC regulatory program for the licensing, construction, and operation of a nuclear reactor in Utah is sufficient to protect the public welfare, such that the State of Utah will relinquish any regulatory authority associated with state permits and licenses applicable to the Project.

The State Engineer erred in not fully evaluating the impacts to the public welfare from the proposed Project and turning that responsibility over to the NRC.

3.9.2. Central Utah Project. The State Engineer subordinated the approved water rights to the Central Utah project:

> Approval of this application, therefore, will be conditioned such that it is subordinated for purposes of priority distribution of water to rights held by various entities for use in the Central Utah Project.[96]

However, the State Engineer failed to provide any information regarding exactly how the priority distribution of water to rights held by various entities for use in the Central Utah Project could impact the provision of water for the Blue Castle Project over time. There is no information on the current or future Central Utah Project withdrawals, their locations, amount, and other pertinent aspects of the Central Utah Project. A decision has been made to give water for the Central Utah Project priority, but the consequences of that decision on the availability of water for the subject water rights were not provided by the State Engineer.

3.9.3. Recreation. The State Engineer determined: "Based on the analysis provided by the applicant, it is unlikely that the withdrawal of an additional 75 cfs of flow from the Green River will impact recreational rafting on the Green River."[97]

The State Engineer failed to conduct an independent analysis of the impacts of the proposed withdrawal on river recreation. There was no analysis of the impacts on river recreation during late summer low-flow conditions, when the demand for water for the Project and agriculture would be high. Low-flow conditions have historically impacted river recreation. Such conditions would be exacerbated by the doubling of the withdrawal of water at Green River. Additionally, river recreation would be adversely impacted by the need to have emergency response plans to evacuate recreational users in case of an emergency and impacts to the water quality by the continued operation of a

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[96] Orders at 16.
[97] Orders at 17.

nuclear reactor near the Green River. The State Engineer failed to evaluate these and other impacts to recreation in the Green River area caused by the proposed Project.

3.9.4. Natural Stream Environment

3.9.4.1. A water right application must be rejected if the State Engineer has information or has reason to believe that the appropriation of water will affect public recreation, the natural spring environment, or prove detrimental to the public welfare.[98] An example of the impacts of uranium development to Endangered Species Act (ESA) listed fish species, at least in Utah, is the potential disruption of the Upper Colorado River Endangered Fish Recovery Program (Recovery Program) which is a collaborative effort between states, federal agencies, water users and environmentalists to recover four species of endangered warm-water fish (Colorado pikeminnow, humpback chub, bonytail, and razorback sucker). To this end, the Recovery Program implements year-round base flows and annual spring peak flows based on each year's snowpack in all reaches of the Green River from Flaming Gorge Dam to the confluence of the Green and Colorado Rivers in Canyonlands National Park. These reaches include critical habitat for the endangered fish—river reaches found to be necessary for the fishes' recovery.

3.9.4.2. That the state is obligated to participate in the Recovery Program is illustrated by the fact that agencies are prohibited from "taking" listed species that occur in the project area. [cite]. Under the ESA, "take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." [99] The U.S. Supreme Court further interprets "harm" to be broader than direct

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[98] Utah Code Ann. §73-3-8(1).
[99] 16 U.S.C. § 1532(19).

physical effects, concluding that the term includes adverse modification of habitat.[100] In fact, the "State of Utah recently submitted the 'Utah Work Plan 2010' to the Recovery Program as an indication of the State's commitment to the Program, diligence to its completion, and sufficient progress with its tasks."[101]

3.9.4.3. Although, the State Engineer admits that the Recovery Program provides participants with a '"reasonable and prudent alternative" to avoid a jeopardy finding and to avoid the "likely destruction or modification of critical habitat" designated for the endangered fishes and that "Utah is a partner in this program," it pushes the cart before the horse in relation to the threat posed by the water right by stating that "the program has been successful in meeting the Endangered Species Act requirements by providing the elements necessary to serve as the reasonable and prudent alternative for successful Section 7 consultations with the U.S. Fish and Wildlife Service for Federal and local water projects."[102]

3.9.4.4. In addition, by stating that the "success of this program has allowed continued water development in the Upper Colorado River Basin,"[103] the State Engineer, incorrectly, interprets the Recovery Program as intended to provide water for development rather than protecting listed species. Worse, the State Engineer implies that the Recovery Program will continue to somehow indefinitely create water "through water

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[100] *Babbitt v. Sweet Home Chapter of Cmtys. For a Great Oregon*, 515 U.S. 687, 697 (1995).
[101] Order at 19.
[102] *Id.*
[103] *Id.*

leases and contracts, coordinated water releases from upstream reservoirs, efficiency improvements to irrigation systems, and re-operation of Federal dams and reservoirs."[104]

3.9.4.5. Similarly, the state defers to the Bureau of Reclamation's February 2006 Record of Decision for operation of Flaming Gorge Dam:

> The purpose of the proposed action is to operate Flaming Gorge Dam to protect and assist in recovery of the populations and designated critical habitat of the four endangered fishes, while maintaining all authorized purposes of the Flaming Gorge Unit of the Colorado River Storage Project (CRSP), *including those related to the development of water resources in accordance with the Colorado River Compact*.[105]

Not only does this conclusion ignore the fact that granting of the water right is not accordance with the Colorado River Compact, because it will directly contribute to Utah not meeting its obligation under that agreement, but it assumes that the water right Applications can be defined as "development" of a water resource. Water resources, however, may be developed only when the applicant has a legal right to the water, which has not been established in this case.

3.9.4.6. In addition, the State Engineer admits that issuance of the water right is contrary to the Recovery Program by stating that:

> The U.S. Bureau of Reclamation has been working cooperatively with the USFWS to develop an operation plan for flow releases from Flaming Gorge Dam to accomplish the goals of the Recovery Program. In September 2005, the USFWS released the Final Biological Opinion on the Operation of Flaming Gorge Dam. Under the proposed action, Flaming Gorge Dam would be operated to achieve the flow and temperature regimes recommended in Muth et al. (2000), while maintaining all authorized purposes of the Flaming Gorge Unit of the Colorado River Storage Project, particularly those related to the development of water resources in accordance with the Colorado River Compact.

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[104] *Id.*

[105] Orders at 19. (emphasis in original).

This further illustrates that issuance of the Permit would be in violation of the ESA, because both the Bureau of Reclamation and the U.S. Fish and Wildlife Service (USFWS) have filed protests against the Change Applications for the very reason that they are contrary to the goals and purpose of the Biological Opinion, Recovery Program and the stated flow and temperature goals.

3.9.4.7. In fact, in its protest of the Transfer Applications, the U.S. Fish and Wildlife Service provides that:

> These additional depletions could contribute to further decline of the Three Fish Species in Utah; roundtail chub, bluehead sucker and flannelmouth sucker and lead to potential listing under the Endangered Species Act (ESA). If these species were listed, water development throughout their habitat would become more regulated. These species range nearly statewide, thus, this would be a significant impact. Therefore, due to the potential reduced ecological function of the Green River, impacts to wildlife species, and impediment to water development across the state, the proposed water right transfer does not meet the public interest criteria.[106] [*See* Exhibit O.]

3.9.4.8. Further, the State Engineer's unsupported "opinion that due to downstream responsibilities under the Colorado River Compact there is and will continue to be sufficient flow in the Green River, both natural and released from Flaming Gorge, which will, during most periods, satisfy the flows recommended by the USFWS for endangered fishes," is directly contradicted by testimony of Dr. Paul B. Holden, a fisheries biologist with 40 years of experience related to the Green River, who responded to Applicants' witness Dr. Thom Hardy's conclusions presented at the January 12, 2010, hearing that the Transfer will not impact ESA listed species. *See* Exhibit P. Specifically,

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[106] Testimony of Megan A. Estep, Chief, Division of Water Resources, U.S. Fish and Wildlife Service, January 12, 2010.

Dr. Holden provides that the "impact of water withdrawal today is typically not the direct effect of any single withdrawal, but the cumulative effect of that withdrawal…. Hence the 70 cfs would add to the cumulative depletions in the river at the point of withdrawal and below…. Cumulative impacts of water withdrawal have impacted, and will continue to impact, the endangered fish."[107]

In addition, Dr. Holden provides:

> Recently the USFWS and Upper Basin Recovery Implementation Program developed in-stream flow considered necessary for recovery of the endangered fish in the Green River. Base flow recommendations for the lower Green River are already not being met in some years, and a constant 70 cfs withdrawal would increase the time that recommended flows were not met. This fact points out the effect with cumulative flow depletion." [108]

3.9.4.9. Any proposed use of water that has a clear potential to be detrimental to the public welfare should not be approved without supporting evidence to the contrary. The State Engineer, therefore, is required to reject the Change Applications under § 73-3-8(1).

3.10. CONCLUSION

As set forth above, the Applicants did not meet the statutory requirements for the approval of a water rights change application, pursuant to Utah Code § 73-3.8. Therefore, Protestors request that the State Engineer reconsider the Orders approving Application for Permanent Change of Water No. a35406 (Water Rights 89-74, 89-1285, and 89-1513), dated March 30, 2009, and Application for Permanent Change of Water No. a35874 (Water Right 09-462), dated August 27, 2009.

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[107] Dr. Paul B. Holden, PhD, Senior Fisheries Biologist, Letter to Kent Jones State Engineer, February 19, 2010.
[108] *Id*.

Respectfully submitted this 9th day of February 2012.

Sarah M. Fields

EXHIBITS

A. Utah Business Search, Transition Power Development LLC.

B. Delaware Incorporation, Blue Castle Holdings, Inc.

C. Utah Business Search, Blue Castle Holdings, Inc.

D. Assignment and Assumption of Water Rights Lease Agreement, San Juan County Water Conservancy District, June 17, 2010.

E. Assignment and Assumption of Water Rights Lease Agreement, Kane County Water Conservancy District, July 14, 2010.

F. Water Rights Lease Agreement, Kane County Water Conservancy District and Transition Power Development LLC, p. 1, 7, and 8.

G. Independent Technical Analysis of Orders of State Engineer, Permanent Change Applications 09-462 and 89-74, cover letter, and Curriculum Vitae, Lawrence R. Eichner, P.E.

H. Electronic Communications between Leon Pexton (UAMPS) and Aaron Tilton (TPD/ BCH), May and December 2009.

I. Notice of Project Financing for Continuing Development of Blue Castle Power Plant; Change Applications a35402 (89-74) and a35874 (09-462), John H. Maybe, Jr., October 7, 2010.

J. Blue Castle Nuclear Power Project Signs $30 Million Private Capital Agreement, Blue Castle Holdings, June 29, 2010.

K. 1990 - 2010 Number of Retail Customers by State by Sector (EIA-861).

L. "SEC Charges Multiple Hedge Fund Managers with Fraud in Inquiry Targeting Suspicious Investment Returns," U.S. Securities and Exchange Commission, December 1, 2011.

M. "Order Instituting Administrative and Cease-and-Desist Proceeding," U.S. Securities and Exchange Commission, November 11, 2011.

N. "Feds: Company backing Utah nuclear plant is a fraud," Salt Lake Tribune, Judy Fahys and Steven Oberbeck, January 26, 2012.

O. Testimony of Megan A. Estep, Chief, Division of Water Resources, U.S. Fish and Wildlife Service, January 12, 2010.

P. Dr. Paul B. Holden, PhD, Senior Fisheries Biologist, Letter to Kent Jones State Engineer, February 19, 2010.

CERTIFICATE OF SERVICE

A copy of the foregoing Request for State Engineer Reconsideration of Orders of the State Engineer: Permanent Change Application No. a35402 (Water Right Nos. 89-74, 89-1285, and 89-1315) and Permanent Change Application No. a35874 (Water Right No. 09-462), January 20, 2012, was served on the parties in the following manner:

Hand delivered to the Division of Water Rights, Price Office, on the 9th day of February 2012:

Kent L. Jones, State Engineer
Division of Water Rights
P.O. Box 146300
Salt Lake City, Utah 84532

Mailed or hand delivered to the following Parties on the 10th day of February 2012:

Kane County Water Conservancy District
190 West Center Street, Suite 200
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Tom and Pamela Mooney
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St. George, UT 84790

Utah Rivers Council
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Kathryn Baker
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United States Bureau of Reclamation
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Provo, UT 84606-7317

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