

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
ADMINISTRATIVE ADJUDICATION DIVISION

RE: DUDLEY DEVELOPMENT CORPORATION
DAM STATE I.D. 46

AAD NO. 11-002/DE

DECISION AND ORDER

This matter came on for Hearing before Hearing Officer David M. Spinella on October 23, 2012. The Rhode Island Department of Environmental Management ("RIDEM"), Office of Compliance and Inspection ("OC&I") filed its Post-Hearing Memorandum on November 5, 2012 and the Respondent Dudley Development Corporation (hereinafter "Dudley") filed its Post Hearing Memorandum on November 30, 2012.

The subject of this matter is the Slatersville Reservoir Middle Dam, State I.D. 46 (hereinafter "Dam 46"), located on the Branch River, in North Smithfield, Rhode Island.

The following facts were stipulated to by the parties prior to the Hearing:

1. The subject dam is identified as the Slatersville Reservoir Middle Dam, State I.D. 46, located on the Branch River, in North Smithfield, Rhode Island ("Dam 46").
2. Dam 46 was constructed about 1886 as part of a mill complex, including reservoirs and other dams also on the Branch River.
3. The Phase I Inspection Report done by the Army Corps of Engineers in 1979 found "[t]he use of the dams and reservoirs for the mill has been abandoned and the dam no longer serves its original intent."
4. At present, the reservoir is mainly utilized for recreation and the dam serves as a recreational and environmental resource.
5. Currently, all or most of the river inflow is spilled over the dam spillway.
6. The 1979 Army Corps Phase I Inspection Report (p. 7-8) indicates that Dam 46 has one draw-off gate / sluiceway which has been permanently closed since prior to 1939.
7. Dudley Development Corporation is the current owner of Dam 46.

8. Rhode Island Department of Public Works Division of Harbors and Rivers Routine Inspection report deemed Dam 46 "Condition Good" on September 20, 1946.
9. Dam 46 was determined to be in "good condition" after an inspection by Earle Prout and Carmine Asprinio of the Department of Natural Resources on April 6, 1978.
10. A Dams section memo, dated October 25, 1983, notes that the "Dam appeared to be in good condition."
11. A Department of Environmental Management Visual Inspection of Dam 46, dated September 21, 1984 noted that the embankment and spillway were in "good condition" with "no operable gates."
12. In a Dams section memo, dated October 18, 1990, Earle Prout noted "lacking an operable low level outlet, the dam is still rendered in "fair" condition as noted in Phase I Report of 1979."
13. Dam 46 was inspected by the Office of Compliance and inspection on May 25, 1999.
14. Dam 46 was visually inspected by GZA GeoEnvironmental, Inc. on behalf of the Office of Compliance and Inspection on May 12, 2009.
15. GZA GeoEnvironmental's Dam Hazard potential Field Checklist noted Dam 46's Concrete and outlet condition to be "good condition."
16. On May 26, 2009, Dudley Development Corporation completed and executed a Rhode Island Department of Environmental management "Dam Registration Form" for Dam 46.
17. Dam 46 was inspected by Pare Corporation on behalf of the Office of Compliance and Inspection on November 12, 2009 and its "Slatersville Reservoir Middle Dam Visual Inspection/Evaluation Report" (the "Pare Corporation Report") rated the overall condition of the dam as "fair" in its Assessments.
18. In the Assessments section of the Pare Corporation Report, Dam 46 "is considered unsafe due to the inoperable low level outlet."
19. The Office of Compliance and Inspection stated it first had cause to believe Dam 46 was unsafe on February 24, 2011.
20. A Notice of Violation was issued on April 1, 2011 to Dudley Development Corporation claiming Dam 46 to be in an unsafe condition solely on the basis of the inoperable low level outlet.

21. Dam 46 is classified by the Department as a high hazard dam.
22. The Department has jurisdiction over the Respondent pursuant to Rhode Island General Laws §§ 42-17.1-1, *et seq.* and 46-19-1, *et seq.*

Joint Exhibits ("JE")

- JE 1. DEM Special Inspection Report, dated September 20, 1946.
- JE 2. DEM Inspection Report, dated April 6, 1978.
- JE 3. Phase I Inspection Report and Inundation Map, ACOE, dated July 1979.
- JE 4. Letter from DEM to Dudley Development Corporation, dated December 19, 1979.
- JE 5. DEM Inspection Memo, dated October 25, 1983.
- JE 6. DEM Visual Inspection Checklist, dated September 21, 1984.
- JE 7. Site Visit Memo, Earle Prout, dated October 18, 1990.
- JE 8. DEM Inspection Report, dated May 25, 1999.
- JE 9. Dam 46 Dam Registration Form, dated May 25, 2009.
- JE 10. Slatersville Reservoir Middle Dam Visual Inspection/Evaluation Report, Pare Corporation, dated November 12, 2009.
- JE 11. Updated Inundation Map Report, GZA, received by DEM on or about April 8, 2010.
- JE 12. Location Map, dated November 16, 2010.
- JE 13. NOV Request, Paul Guglielmino, dated February 12, 2011.
- JE 14. Notice of Violation, dated April 1, 2011.
- JE 15. DEM Dam Safety Regulations, December 2007.
- JE 16. 2012 overhead photo of dam.

Facts and Travel

The Respondent Dudley Development Corporation (hereinafter "Dudley") was issued a Notice of Violation by the Office of Compliance and Inspection for not maintaining Dam 46, which was classified as a high hazard dam in an unsafe condition solely "because of the inoperable low gate". (JE #14). The Department of Environmental Management's Dam Safety Regulations were promulgated in December, 2007. Rule 6 (AD) defines unsafe dam as follows:

Unsafe dam means the condition of a regulated dam, as determined by the Director, is such that an unreasonable risk of failure exists that will result in a probable loss of human life or major economic loss. Among the conditions that would result in this determination are excessive vegetation that does not allow the Director to perform a complete visual inspection of a dam, excessive seepage or piping, significant erosion problems, inadequate spillway capacity, inadequate capacity and/ or condition of control structure or structures, or serious structural deficiencies, including movement of the structure or major cracking. (JE #15).

Rule 6 (k) defines "High Hazard Dam" as a dam where failure or misoperation will result in a probable loss of human life. (JE #15).

The Office of Compliance and Inspection ("OC&I") presented its sole witness, Mr. Paul Guglielmino, Senior Sanitary Engineer with the Office of Compliance and Inspection at the RIDEM to testify. Mr. Guglielmino is a registered professional engineer and has worked at RIDEM since 1987. Mr. Guglielmino works within the Dam Safety Division. He does inspections, reviews inspection reports of others, reviews plans and specs for dam repair, applies for federal grants, issues contracts for, or gets involved with the issuance of contracts for dam inspections or hazard classification reports, reads the conditions of dams as part of inspections and determines if dams are unsafe or not. (Transcript ("TR.") pg. 8). He also indicated that dam classifications can change from time to time especially after the Dam Safety Regulations came into effect. (TR. pg. 8).

Mr. Guglielmino classified Dam 46 as High Hazard because of the inoperability of the low level outlet (which allows the release of water) as indicated in the Pare Corporation Report in 2009. (TR. pg. 21 and JE #10). OC&I relied on the Pare Corporation Report exclusively when classifying Dam 46 and during the Hearing, but did not present any witnesses from Pare Corporation to rebut testimony of Respondent's witnesses.

On cross-examination Mr. Guglielmino testified that in 1999, while inspecting Dam 46, he did not see the low level outlet. (TR. pg. 27). He said that many dams in Rhode Island do not have a sluiceway (low level gate). (TR. pg. 30). The RIDEM report was prepared on May 25, 1999 but the Notice of Violation ("NOV") was not issued until 2011. (TR. pg. 33). The reason the RIDEM did not take action in 1999 is that there were no regulations in place regulating Dam Safety until 2007 (TR. pg. 43). On cross-examination, Mr. Guglielmino admitted that Rhode Island General Laws §46-19-4 regarding dam safety was in effect (TR. pg. 44). This statute was referenced during the cross-examination of Mr. Guglielmino, which produced the following exchange:

Q Now, are you familiar with the state statute involving dam safety 46-19-4?

A In general.

Q Let me read to you the middle of the first paragraph. "If in the judgment of the Director the dam or the reservoir be not sufficiently strong to resist the pressure of water upon it." Is this dam sufficiently strong to resist the pressure of water upon it?

A Actually, we haven't actually analyzed that specifically, but.

Q "Or if from any other cause the Director shall determine the dam or reservoir to be unsafe, or in his or her judgment there is reasonable cause to believe that danger to life or property may be apprehended from the unsafe dam or reservoir." What danger to

life or property do you conclude when result from this sluicagate being plugged?

A That there is – I don't know if – I'm not sure what you're asking me.

Q The only reason for the Notice of Violation is the fact that that gate is not operable, it's plugged, is that correct?

A That it's inoperable, yes.

Q And it's been plugged since 1936, according to your testimony?

A Yes.

Q And what is the danger to life or property that results from that gate being plugged?

A There's no ability to lower the water in advance of a storm, or if there is a problem with another part of the dam, safety concern.

Q Now, if you lowered the water on Dam 46 prior to a storm, you would have a problem with the lower dam, which is very close to it, is that correct? Where is that water now?

A Over the spillway.

Q But the lower dam is narrower, is that correct? You've seen all three dams, right?

A I have.

Q The lower dam is very narrow?

A I don't recall exactly, but I believe it is narrower.

Q And let's say that that lower dam could even handle the extra capacity you created with gate, that's going to put more water going down the Branch toward the Blackstone, is that correct?

A Yes.

Q Now, if you look at Exhibit 2, the D and R report, and on page one, the first sentence,

I'd like you to read the first sentence, after the capitalized section that says report.

A "Aggressive spillway appears to be in excellent condition."

Q And just for the Hearing Officer's benefit, the Department of Natural Resources for the State of Rhode Island was the predecessor agency responsible for dam safety, is that correct?

A Yes, I believe the Natural Resources was the predecessor of DEM.

Q Isn't it true that the lowering of the water's primary purpose with this dam would be to perform maintenance on the dam?

A That would be one of them.

Q Wouldn't that be the primary one in this dam, Dam 46?

A I don't believe so, but.

Q Again, you testified that you don't know what the capacity of this gate was, do you?

A No, I don't.

(TR. pgs. 35-37).

Respondent also pointed out while cross examining Mr. Guglielmino that there have been other cases where the dam owner has been allowed to abandon the low level outlet. There was no reason given why these outlets were allowed to be abandoned. (TR. pg. 44).

The Respondent then presented Mr. Peter H. Baril, who is a principal and engineer with GZA GeoEnvironmental. He was qualified and admitted, without objection, as an expert in the field of hydrologic engineering. (TR. pg. 53). He rebutted Mr. Guglielmino's testimony concerning the inoperability of the low level gate as the reason for classifying Dam 46 as a high hazard dam.

Ironically, RIDEM hired GZA GeoEnvironmental as a consultant to assist the Department in evaluating and re-evaluating the hazard classification of dams (TR. pg. 54). Mr. Baril stated that he is familiar with RIGL §46-19-4 and the DEM's *Rules and Regulations for Dam Safety*. He testified that the low level outlet at Dam 46 was not intended for flood control. (TR. pg. 56). He also opined that the low level gate was not an integral part of the spillway as the spillway was the main hydraulic control device to pass normal flows and flood flows (TR pg. 56). He stated that the capacity of the low level outlet "would really be negligible with respect to the oncoming flood waters coming down the Branch River" (TR. pg 56). The reason is that the dam or spillway extends almost the entire span of the river. (TR. pg. 56 and 59).

Mr. Baril testified that he did not personally inspect this dam while he and GZA Environmental were acting as a consultant to RIDEM to reassess the classification of dams. (TR. pg. 58). He reviewed all documentation pertaining to Dam 46. (TR. pg. 58).

He testified, in his expert opinion, that the operability or inoperability of the low level outlet does not affect the safety of Dam 46. (TR page 59). He then finished his expert testimony on direct examination by stating that Dam 46 is not "unsafe" defined as having an unreasonable risk of failure that would result in the probable loss of human life or economic loss. (TR. pg. 63).

It should be noted that GZA GeoEnvironmental only made recommendations to RIDEM concerning the Dam classifications but RIDEM actually classified them. (TR. pg. 68). Pare Corporation evaluated the condition of the dam and GZA GeoEnvironmental submitted the inundation map, which shows you if the dam does fail, how far that water will go and what structures and/ or improvements will be impacted (TR. pg. 69).

The last witness presented by Respondent was Mr. Michael DeFrancesco. He was qualified and presented as an expert in civil engineering with experience in hydroelectric. (TR. pg.

74). He personally inspected Dam 46 about twenty (20) years ago for Polytop Corporation as part of a project to study hydroelectric feasibility on the Branch River. (TR. pg. 73). In 1990 he also reviewed most, if not all of the reports and data in the RIDEM file from 1939 – 1984. In 2006, he was engaged by Respondent Dudley Corporation to do another hydroelectric feasibility study, which led to a Federal Energy Regulatory Commission License for Dam 43. (TR. pg. 75). His work included a study of the hydrology for the Branch River upstream and downstream of Dam 43 and the other dams (TR. pg. 76). He studied the construction of Dam 46 at that time and stated that if the low level outlet were wide open it would have an insignificant effect on drawing down the reservoir or handling the flood flow (TR. pg. 77). The water would go into the next reservoir down according to Mr. DeFrancesco. (TR. pg. 77).

Analysis

The burden of proof in this matter rests with RIDEM to prove the allegations in the Notice of Violation by a preponderance of the evidence. “Preponderance of Evidence” is defined as follows:

“Evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proved is more probable than not.” Blacks Law Dictionary, 5th Edition, (1979).

The Respondent has stipulated to the fact that Dam 46 was classified as a “high hazard” dam. (Stipulations of Fact 21). Based on the expert testimony of Mr. Baril and Mr. DeFrancesco, Respondent contends that despite the Dam’s “high hazard” classification, the reason for the classification (the inoperable low level gate) does not make the dam “unsafe”, defined as having an unreasonable risk of failure that would result in the probable loss of human life or economic loss.

I found Mr. Guglielmino's testimony to be forthright and credible. He explained his reasoning when classifying Dam 46 as "high hazard" by relying on the Pare Corporation Report of November 2009 and his own inspection of the dam. It is also abundantly clear that Mr. Guglielmino and his division at RIDEM had their hands full when reclassifying over two hundred dams across the State of Rhode Island (TR. pg. 66) over a period of years in concert with Pare Corporation and GZA GeoEnvironmental.

This case presents a very unique situation in that the Respondent's key expert (Peter Baril of GZA GeoEnvironmental) was hired by the RIDEM as a consultant to provide information necessary for the RIDEM to classify the dams across the State pursuant to the Dam Safety Regulations of 2007. Rule 6 (AD) defines an "unsafe dam" to mean ... "the condition of a regulated dam, as determined by the Director, is such that an unreasonable risk of failure exists that will result in a probable loss of human life or major economic loss". Rule 6AD (JE #15). The parties agreed that the low level gate has been inoperable/ permanently closed prior to 1939. (Stipulated Fact 6). Dam 46 was visually inspected by Pare Corporation; GZA GeoEnvironmental, Inc., RIDEM or its predecessor Department of Natural Resources, and the Army Corps. of Engineers on several occasions as far back as 1939. On each occasion, the dam was noted to be in "fair" or "good" condition. (Stipulated Facts 8, 9, 10, 11, 12, 15, 17). The experts who testified for Respondent testified that the dam is not unsafe (TR. pg. 63) and that due to the way that Dam 46 is constructed, and because of the configuration and construction of the upstream and downstream dams, the low level gate on Dam 46 does not impact the safety of Dam 46. (TR. pg. 76). Mr. DeFrancesco testified as an expert in civil engineering with experience in "hydroelectric" (TR. pg. 74). He testified about his studies of the Branch River and the dams therein including Dam 46 to demonstrate that the low level gate would be "meaningless" and

“insignificant” on Dam 46 even in a flood situation on the Branch River (TR. pg. 80). Thus, he concludes the low level gate, even if it were operable, would not be able to be used for its intended purpose of drawing down the normal river flow (TR. pg. 80).

In evaluating the “helpfulness” of an expert’s testimony, Rhode Island Courts require an expert’s opinion to be of “substantial probative value”. Montuori v. Narragansett Electric Co., 418 A. 2d 5 (R.I. 1960).

In this case, the testimony of both experts, Mr. Baril and Mr. DeFrancesco was of substantial probative value regarding the inoperable low level gate. The gate has been inoperable since at least 1936 and does not render the dam “unsafe” pursuant to its definition and therefore was not a high hazard dam in their expert opinions. Mr. Baril stated that the spillway, not the low level gate, was the main hydraulic control device to pass normal flows and flood flows and the capacity of the low level outlet would really be negligible with respect to the oncoming flood waters coming down the Branch River because the dam or spillway extends almost the entire span of the river (TR. pg. 56 and 59).

Mr. DeFrancesco provided enlightening testimony regarding the size of the Branch River, average flows, the capacity of the spillway, potential flood flows at Dam 46 as well as effect of upstream and downstream dams on river flows to prove his point that the inoperable low level gate was “insignificant” or “meaningless” in terms of its ability to draw down even a normal river flow. (TR. pg. 80). His testimony and Mr. Baril’s was un rebutted. Lastly, all of the documentation stipulated to or testimony presented at the Hearing demonstrates that Dam 46, historically and presently, is in “fair” or “good” condition except that the Pare Corporation Report stated that due to the inoperable low level outlet, the dam is “unsafe”. No one from Pare Corporation testified or rebutted Respondent’s expert witnesses.

I therefore find that the OC&I has failed to carry its burden of proving, by a preponderance of the evidence, the facts, as alleged in the Notice of Violation dated April 1, 2011 that Respondent Dudley Development Corporation, violated Rule 4A of the *Rules and Regulations for Dam Safety* requiring the owner of a high hazard dam to maintain the dam in a safe condition. (NOV pg. 2).

Stipulated Findings of Fact

1. The subject dam is identified as the Slatersville Reservoir Middle Dam, State I.D. 46, located on the Branch River, in North Smithfield, Rhode Island ("Dam 46").
2. Dam 46 was constructed about 1886 as part of a mill complex, including reservoirs and other dams also on the Branch River.
3. The Phase I Inspection Report done by the Army Corps of Engineers in 1979 found "[t]he use of the dams and reservoirs for the mill has been abandoned and the dam no longer serves its original intent."
4. At present, the reservoir is mainly utilized for recreation and the dam serves as a recreational and environmental resource.
5. Currently, all or most of the river inflow is spilled over the dam spillway.
6. The 1979 Army Corps Phase I Inspection Report (p. 7-8) indicates that Dam 46 has one draw-off gate / sluiceway which has been permanently closed since prior to 1939.
7. Dudley Development Corporation is the current owner of Dam 46.
8. Rhode Island Department of Public Works Division of Harbors and Rivers Routine Inspection report deemed Dam 46 "Condition Good" on September 20, 1946.
9. Dam 46 was determined to be in "good condition" after an inspection by Earle Prout and Carmine Asprinio of the Department of Natural Resources on April 6, 1978.
10. A Dams section memo, dated October 25, 1983, notes that the "Dam appeared to be in good condition."
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12. In a Dams section memo, dated October 18, 1990, Earle Prout noted "lacking an operable low level outlet, the dam is still rendered in "fair" condition as noted in Phase I Report of 1979."
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16. On May 26, 2009, Dudley Development Corporation completed and executed a Rhode Island Department of Environmental management "Dam Registration Form" for Dam 46.
17. Dam 46 was inspected by Pare Corporation on behalf of the Office of Compliance and Inspection on November 12, 2009 and its "Slatersville Reservoir Middle Dam Visual inspection/Evaluation Report" (the "Pare Corporation Report") rated the overall condition of the dam as "fair" in its Assessments.
18. In the Assessments section of the Pare Corporation Report, Dam 46 "is considered unsafe due to the inoperable low level outlet."
19. The Office of Compliance and Inspection stated it first had cause to believe Dam 46 was unsafe on February 24, 2011.
20. A Notice of Violation was issued on April 1, 2011 to Dudley Development Corporation claiming Dam 46 to be in an unsafe condition solely on the basis of the inoperable low level outlet.
21. Dam 46 is classified by the Department as a high hazard dam.
22. The Department has jurisdiction over the Respondent pursuant to Rhode Island General Laws §§ 42-17.1-1, *et seq.* and 46-19-1, *et seq.*

Additional Findings of Fact at Hearing

23. Mr. Paul Guglielmino, Senior Sanitary Engineer for the Department of Environmental Management, Office of Compliance and Inspection, classified Dam 46 as a high hazard dam solely because of the inoperable low gate.
24. Mr. Guglielmino classified Dam 46 based on the Pare Corporation Report.

25. The low level gate on Dam 46 has not been operable since 1936.
26. No witnesses from Pare Corporation testified at the Hearing.
27. Many dams in Rhode Island do not have a low level gate.
28. Other dam owners have been allowed to abandon the low level outlet.
29. Mr. Peter H. Baril qualified as an expert in the field of hydrologic engineering and rebutted Mr. Guglielmino's testimony regarding the low level gate.
30. GZA GeoEnvironmental, Mr. Baril's employer, was a consultant to the Department of Environmental Management when it classified the dams in the State.
31. Mr. Michael DeFrancesco was qualified and presented as an expert in civil engineering with experience in hydroelectric.
32. Mr. DeFrancesco personally inspected Dam 46 approximately twenty (20) years ago and recently reviewed all documentation in the RIDEM file concerning Dam 46 from 1939 – 1984.
33. Mr. DeFrancesco also studied the construction of Dam 46 and other dams in the Branch River and the hydrology of the Branch River upstream and downstream of Dam 46 on behalf of Dudley Development Corporation while preparing a hydroelectric feasibility study in 2006.
34. Mr. DeFrancesco testified in his expert opinion that based on the construction of Dam 46, if the low level outlet were wide open, it would have an insignificant effect on drawing down the reservoir or handling a flood flow. The water would go into the next reservoir down.
35. The RIDEM Dam Safety Regulations became effective in December 2007.
36. RIDEM issued the Notice of Violation on April 1, 2011.

Conclusions of Law

1. The RIDEM has jurisdiction over the Respondent pursuant to RIGL §42-17.1-1 et seq. and §46-19-1 et seq.
2. The RIDEM has failed to prove, by a preponderance of the evidence, the allegations against Respondent, Dudley Development Corporation in the Notice of Violation dated April 1, 2011.

3. Respondent, Dudley Development Corporation, did not violate Rule 4A of the *Rules and Regulations for Dam Safety*.
4. Respondent's Appeal is sustained.

Entered as an Administrative Order this 10th day of May, 2013.



David M. Spinella
Hearing Officer
Administrative Adjudication Division
One Capitol Hill 2nd Fl
Providence, RI 02908
(401) 574-8600

CERTIFICATION

I hereby certify that I caused a true copy of the within Decision and Order to be forwarded by first class mail, postage paid, to S. Paul Ryan, Esquire, 201 Washington Road, Barrington, RI 02806 and Wendy A. Waller, Esquire, 3 Beavertail Road, Jamestown, RI 02835; via interoffice mail to Richard M. Bianculli, Jr., Esquire, DEM Office of Legal Services and David Chopy, Chief, Office of Compliance and Inspection, 235 Promenade Street, Providence, RI 02908 on this 10th day of May, 2013.



NOTICE OF APPELLATE RIGHTS

This Final Order constitutes a final order of the Department of Environmental Management pursuant to RI general Laws § 42-35-12. Pursuant to R.I. Gen. Laws § 42-35-15, a final order may be appealed to the Superior Court sitting in and for the County of Providence within thirty (30) days of the mailing date of this decision. Such appeal, if taken, must be completed by filing a petition for review in Superior Court. The filing of the complaint does not itself stay enforcement of this order. The agency may grant, or the reviewing court may order, a stay upon the appropriate terms.