



Oregon
Kate Brown, Governor

Water Resources Department
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January 22, 2021

Chris Janigo, Interim City Engineer
City of Newport
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Re: Notification of Unsafe/Potentially Unsafe Dam

Based on an inspection and analysis, the Oregon Water Resources Department (the Department) has identified an Unsafe condition and a Potentially Unsafe condition at Big Creek Dam #2 (upper dam) and a Potentially Unsafe condition at Big Creek Dam #1 (lower dam). As required by Oregon Revised Statute (ORS) 540.458(1) and further described in Oregon Administrative Rule (OAR) 690-020-0340 this letter serves as written notification that Unsafe/Potentially Unsafe conditions exist with the Big Creek Dams and corrective actions are needed. Information regarding identification of the Unsafe/Potentially Unsafe conditions and details regarding the corrective actions needed to address the conditions are contained below in this letter. Also contained in this letter are your options and responsibilities as the dam owner in responding to this notification and addressing the Unsafe/Potentially Unsafe conditions with the Big Creek dams.

The department conducted a routine dam inspection on October 15th, 2018 during which we observed corrosion of, and leakage through, the corrugated metal pipe (CMP) portion of the overflow spillway for Big Creek Dam #2. The leakage occurs at locations throughout the length of the CMP portion of the spillway. The spillway CMP is a route for any internal erosion, and flow of the spillway can carry away eroded material despite the attempts being made to monitor this situation. Internal erosion can increase over time and can result in catastrophic failure of a dam with little warning. Subsequent OWRD inspections of this dam on May 29th, 2019 and on August 4th, 2020, indicated that the corrosion of the CMP portion of the overflow spillway continues to worsen with time.

This is an Unsafe condition because the holes through which the water is leaking are a potential route for embankment materials displaced by internal erosion. Additional investigation of the extent of the internal erosion is needed. This should be by direct observation unless the City can propose a more reliable means of determining internal erosion. If internal erosion is confirmed, changes to operations of the reservoir will likely be needed until such time as control of internal erosion is achieved. Necessary planning steps are provided later in this letter.

Prior to the aforementioned internal erosion situation, a seismic stability analysis of both Big Creek dams was performed by consulting engineers working for the City. This analysis indicated that both dams will deform significantly during a Cascadia Subduction Zone (CSZ) earthquake. For both dams, the deformation could cause the dam crest to drop below the water line which could lead to overtopping of the dam crest and subsequent catastrophic failure of the dam. Based on these seismic deformation analyses, the department has determined that both Big Creek Dams, are in a Potentially Unsafe condition. To date we have been informed as to general plans to address the potentially unsafe conditions of the dams but have no timeframes for any of this work. More specific plans and timeframes are needed.

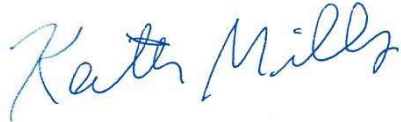
Corrective Actions will be necessary to address the Unsafe/Potentially Unsafe conditions with the Big Creek dams. At this time OWRD dam safety will continue working with the City in a cooperative manner as described and allowed in ORS 540.461. The next steps in these cooperative actions will be development of plan(s) and time frame(s) that lead to corrective actions. As described in OAR 690-020-0340(3)(a)(C), you have the opportunity to, and I encourage City staff and your engineer to meet remotely with me to discuss this Notification and plans that lead to Corrective actions. Please let me know, in writing, that City staff and your consulting engineer(s) can meet to discuss development of plans and to schedule a time for this meeting after you have discussed this Notification and have specific elements to propose in the plan(s).

At the present time it appears four plans may be needed, with the first three plans are based upon findings from implementation of the earlier plans. The description of plans and anticipated timeframes are as follow (this is for the submittal of the plan, not completion of the work, the timeframes for completion will be included in your plans):

1. Investigation of the extent of internal erosion below the spillway conduit, submit plan by **3-1-21**
2. Interim measure to reduce internal erosion and restore spillway function, submit plan by **7-1-21**
3. Plan of operations to reduce potential for winter flow over the spillway, submit plan by **9-1-21**
4. Plan for removal of both dams and construction of the replacement dam, submit plan by **12-1-21**

As described in OAR 690-020-0340(3)(a)(D), you have the opportunity to provide information to explain why you, as the dam owner, disagree with the matters asserted in this notification alleging Big Creek Dam #2 is Unsafe and that both Big Creek Dam #1 and #2 are Potentially Unsafe. If you have such information, we can discuss this during our remote meeting. The efforts made by the City thus far to address the Unsafe and Potentially Unsafe conditions are greatly appreciated. Thank you for your continued cooperation and we look forward to working with you in the near future.

Sincerely,



Keith Mills, P.E., State Engineer
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C: Tony Janicek Ph.D., P.E., Dam Safety Program Coordinator
Tom Paul, Special Assistant to the Director
Dam Safety File B-28a & 28b