



# ***STATE DEVELOPMENT AND REGIONAL INDUSTRIES COMMITTEE***

**Members present:**

Mr CG Whiting MP—Chair  
Mr JJ McDonald MP  
Mr MJ Hart MP  
Mr JE Madden MP  
Mr TJ Smith MP

**Staff present:**

Ms S Galbraith—Committee Secretary  
Mr B Smith—Assistant Committee Secretary

## **PUBLIC BRIEFING—CONSIDERATION OF AUDITOR-GENERAL'S REPORT 9: 2021-22— *REGULATING DAM SAFETY***

**TRANSCRIPT OF PROCEEDINGS**

**MONDAY, 10 OCTOBER 2022**

**Brisbane**

## MONDAY, 10 OCTOBER 2022

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### **The committee met at 10.00 am.**

**CHAIR:** Good morning. I declare open this public briefing for the committee's consideration of Auditor-General's report 9 of 2021-22, *Regulating dam safety*. My name is Chris Whiting, member for Bancroft and chair of the committee. I would like to respectfully acknowledge the traditional custodians of the land on which we meet today and pay our respects to elders past, present and emerging. We are very fortunate to live in a country with two of the oldest continuing cultures in Aboriginal and Torres Strait Islander peoples, whose lands, winds and waters we all share. With me today are Mr Jim McDonald, member for Lockyer and deputy chair; Mr Jim Madden, member for Ipswich West; Mr Michael Hart, member for Burleigh; and Mr Tom Smith, member for Bundaberg. Mr Robbie Katter, member for Traeger, is an apology today.

This briefing is a proceeding of the Queensland parliament and is subject to the parliament's standing rules and orders. Only the committee and invited witnesses may participate in the proceedings. Witnesses are not required to give evidence under oath or affirmation, but I remind witnesses that intentionally misleading the committee is a serious offence. I remind committee members that departmental officers are here to provide factual or technical information. Any questions seeking an opinion about policy should be directed to the minister or left to debate on the floor of the House. These proceedings are being recorded and broadcast live on the parliament's website. Media may be present and are subject to the committee's media rules and the chair's direction at all times. You may be filmed or photographed during the proceedings and images may also appear on the parliament's website or social media pages. Could everyone please turn their mobile phones off or onto silent mode.

**COWLEY-GRIMMOND, Mr Jarrod, Executive Director, Water Operations and Systems, Department of Regional Development, Manufacturing and Water**

**DOBE, Mrs Linda, Deputy Director-General, Water Resource Management, Department of Regional Development, Manufacturing and Water**

**NIELSEN, Mr Chris, Director, Dam Safety, Water Operations and Systems, Department of Regional Development, Manufacturing and Water**

**CHAIR:** I now welcome representatives from the Department of Regional Development, Manufacturing and Water. I invite you now to make an opening statement, after which the committee members will have some questions for you.

**Mrs Dobe:** Thank you very much for the opportunity to appear before the committee and to provide an update on the department's progress in implementing the Queensland Audit Office's nine recommendations. The department welcomes the Queensland Audit Office report as it provides an opportunity for us to reflect on and enhance our regulatory approach to support the commitment to public safety. The department takes dam safety seriously, and this is reflected by Queensland's strong record on dam safety over many decades and continuous improvement in dam safety regulation.

Firstly, I would like to set the scene by briefly outlining the department's approach to dam safety regulation before detailing how the department has responded to each of the Queensland Audit Office recommendations. The regulatory framework for dam safety is established in the Water Supply (Safety and Reliability) Act. The aim of the regulatory framework is to minimise the risk to the public living and working downstream of dams resulting from dam failure. Queensland has 111 referable dams. Dam owners include state owned entities like Seqwater and Sunwater—who own around half of the referable dams—councils, mining companies and pastoral companies.

The Australian National Committee on Large Dams, or ANCOLD, is a non-government, non-statutory body that produces guidance on dam safety that is considered industry best practice. All state jurisdictions point to ANCOLD guidelines. Queensland's regulatory framework reflects and in some cases exceeds the ANCOLD guidelines. Queensland's regulatory framework has evolved over time in response to various reviews, flood events, ANCOLD guideline changes and updated Bureau of Meteorology rainfall projections.

Queensland's regulatory framework places the responsibility for monitoring, assessing and responding to potential dam safety risks with the dam owner. This is a whole-of-life framework covering dam design, construction, maintenance, operation and decommissioning phases. The role of the department is to enforce the regulatory framework and ensure dam owners are properly undertaking their requirements as set out in the legislation, in regulatory guidelines and in dam safety conditions set for each dam. The department assesses these risks through the review of reports and plans submitted to the department and undertaking onsite audits to ensure these reports have been appropriately applied to dam management processes.

The department uses a range of regulatory tools to achieve compliance including education and informal and formal warnings. Penalty infringement notices and prosecutions are also available. The department has also established a dam safety community of practice for dam owners to share technical knowledge and for the department to set expectations as a regulator. The department also has an active involvement in ANCOLD committees and has established a community of practice with other state dam safety regulators. The dam safety functions of the department were ISO accredited in 2020 to provide assurance that there were appropriate systems and processes to support the dam safety regulatory function.

The Queensland Audit Office identified nine recommendations for the department to improve the implementation/application of its regulatory framework in approach to dam safety. All nine recommendations have already been actioned by the department, and I will briefly outline what has already been done.

Recommendation 1 is an overarching one on improving regulatory performance compliance and continuous improvement. The department has embraced continuous improvement across all of its dam safety functions. Further actions to address this recommendation are included in the responses to the remaining eight recommendations.

Recommendation 2 has been completed as the department has updated the acceptable flood capacity guidelines and now requires dam owners to formally advise how and when spillway upgrades will be completed and report on progress. The dam safety conditions for each dam have also been updated to reflect the new guidelines. This allows the department to formally monitor progress. I can advise that the 21 dams scheduled for upgrade by 2015 were completed on schedule. The 13 dams were upgraded between 2016 and today. There are currently eight dams with upgrade works being undertaken and a further four upgrades on track to be completed by 2025. All remaining dam safety upgrades required by 2035 are on track to be completed by this time.

In response to recommendation 3, an independent expert reviewed the department's frequency of assessments and advised they are consistent with contemporary national and international industry practice and align with ANCOLD guidelines. The department will continue to monitor whether this frequency continues to be appropriate. The department engaged an independent engineering expert consultant to undertake flood capacity assessments of four privately owned dams that were identified in the audit report. This determined that they met the acceptable flood capacity and no further regulatory action was required.

In response to recommendation 4, three new positions have been added to the dam safety team and a restructure has been completed to separate the compliance focused functions from the engineering focused functions. This strengthens the engineering capacity and improves consistency in compliance.

In response to recommendation 5, which relates to the department processes for prioritising undertaking site audits, it should be noted that site audits are not engineering audits of dams but are checking the validity of information provided in regulatory reports. An independent review confirmed that the number, prioritisation and frequency of audits reflects industry and national best practice. They also highlighted that an audit conducted at one dam is likely to influence the dam safety management practices at all dams across that dam owner's portfolio. The department acknowledges that dam audit prioritisation and frequency is an important facet of the regulatory framework and will continue to review how this is undertaken. It should be noted that the upgrade to the referable dams register will better support decision-making in this space.

In response to recommendation 6, the department has updated the guidelines on safety assessments for referable dams to now require confirmation of funding arrangements being achieved in dam safety upgrade progress reports. The department will consider whether the proposed time frames are justifiable and consistent with industry practice, if the plan is feasible and if the dam owner has the capacity to include future financial provision to deliver the upgrade and will target compliance actions accordingly. However, the regulator will not be compromising dam safety requirements or

time frames by considering whether or not the dam owner has the capacity to pay. All dam safety upgrades are currently on track and scheduled to be completed within the current time frames. The department continues to closely monitor their progress.

In response to recommendation 7, the department has completed enhancements to the referable dams register to deliver on this recommendation. In response to recommendation 8, the department has improved records management to support improved compliance through recent enhancements to the referable dams register system. The establishment of the principal compliance officer role and improved governance, including assessment of compliance performance, has also been improved, and improvements will continue to be actioned. In response to recommendation 9, a dam safety compliance escalation pathway has been developed and is in use.

We have reviewed the transcript from the previous hearing on 25 August and we would like to provide you with a clarification. The date of the last audit listed in Appendix E relates to the department's dam site audits to assess compliance. These audits are not engineering or dam safety inspections; they are audits to validate the dam owner's compliance with the dam safety conditions. The committee will be comforted to know that it is a regulatory requirement for dam owners of the higher consequence dams in Queensland to be inspected daily by experienced dam operators, inspected annually by a registered professional engineer, comprehensively inspected every five years by a registered professional engineer, and effectively reassessed from scratch every 20 years. Special inspections are conducted following every major flood event or following detection of a potential deficiency by the dam owner. Dam owners with smaller dams with lower consequences have only slightly less onerous inspection schedules but commensurate with their risks and reflecting industry best practice. I hope this clarifies that situation.

As you can see, the department has taken this audit seriously and has responded comprehensively and quickly to the audit recommendations. The department will continue to reflect on and improve the dam safety regulatory functions to ensure public safety risks are appropriately managed by dam owners.

**CHAIR:** Thank you very much, Mrs Dobe. I appreciate that you have just answered a number of questions I wrote down. As we talked about last time, that is a pretty comprehensive response to the auditor's report. You have addressed all those noncompliance issues and addressed all those recommendations. You now have a dedicated project team and \$3.4 million over four years to address the recommendations. For example, you said you have a new compliance function and a new compliance officer. Can you go through in a bit more detail what that dedicated project team does? You have talked about the desktop audits, making sure that all the dam owners are doing that work. Give the committee a feel for what the team would do.

**Mrs Dobe:** The new staff we have employed in the dam safety team?

**CHAIR:** Yes.

**Mr Nielsen:** One of the first things we have done is we separate the compliance activities from the engineering activities. We have streamlined more of the engineering side of the business to focus more on reviewing the reports, the engineering submissions, the design studies, the technical review processes and such. In the past, those engineers were also responsible for their portfolios of regulatory compliance activities, keeping track of the dates with which reports would be submitted and such. We have shifted that responsibility across to the compliance team. It goes across all of the dam safety regulatory functions, which include emergency action plans, keeping track of the dates, looking at our risk management frameworks and the like. That consistency and standardisation of our approach, linked in with the enhanced IT system, the referable dams register, getting better use out of that, optimising it—that is what we have been working on.

With regard to the three new positions, the first new position we have is an engineering manager who is focused far more on the engineering side to make sure that we have a good, strong engineering team keeping track of the technical aspects. Over on the other side, we have a compliance officer who is responsible for the issuance of noncompliance following the escalation pathway we have established for responding to noncompliance, keeping track of dates and making sure we send out warning letters and such when reports are not coming in on time. We also have an IT officer who is now coordinating the delivery of the RDR and also optimising the delivery of reports and making sure that we get the right information that we need at the right time.

**CHAIR:** You mentioned you were up to date chasing up those dam reports. Could you go through those figures again? From the response there seems to be an improvement on that. I wanted to make some notes. You met the ones from 2015 to 2022. Can you give me the figures of meeting all those targets?

**Mrs Dobe:** I think Chris has all of those at his fingertips.

**Mr Nielsen:** Is this for the upgrades you are referring to?

**CHAIR:** The dam site audits for this financial year. They may well be up to date, but you have chased up all the other ones before then.

**Mrs Dobe:** The number of inspection and engineering reports reviewed in the past 12 months is 50 and the number of emergency action plans reviewed in the last 12 months is 86.

**CHAIR:** What is the name of those plans again?

**Mrs Dobe:** The emergency action plans. They have to be reviewed every 12 months.

**CHAIR:** There were 86, did you say?

**Mr Nielsen:** We have done 86 this year. Every dam has an emergency action plan. Every year dam owners need to review their emergency action plan and make a decision about whether or not they want to resubmit it for approval by us. We receive 111 submissions. We receive that on 1 October every year. We also have a rolling schedule of emergency action plans to be updated at least every five years. We have a fairly rigorous process to review those. With the engineering and inspection reports, there are about 60 category 2 dams that need to do annual engineering inspections and they need to be submitted to us. Every single dam needs to have a comprehensive engineering inspection done every five years. That is a review of not just the structural integrity of the dam but also its management—how it is operated—and also, to some extent—to a great extent, actually—just how compliant they are with dam safety management requirements, including those that we provide. Then we also get the safety reviews once every 20 years, and that is a redesign of the dam from scratch. We do receive a lot of reports on those aspects each year.

**CHAIR:** It makes sense to have a compliance unit instead of lumping that onto the engineers to do that, as well as their core functions.

**Mr Nielsen:** Definitely, yes. It is important to make sure that there are engineers reading those reports, though. That is a very important function to make sure that we keep our technical edge.

**CHAIR:** Back on the financial year dam site audits, I think there were 15—I have read in the response—due for this financial year. How far through are you on that? It is only the start of the financial year.

**Mr Nielsen:** I am just trying to recall. I do not know the numbers exactly. We typically try not to do them during the wet season. That is partly because we have trouble getting to some of the dam sites on occasions. Also we can get disrupted, and we do not want to disrupt the dam owner too much during a time when they really need to be ready. We typically do the majority of those audits in the dry season. We did get the 15 done, but they were, I think, six to eight weeks overdue in the 2021-22 year. That was primarily because there was quite a lot of flooding going on and it was quite hard to get in touch with dam owners. When they are reasonably active on dam safety management at the time, it is best that we stay away.

**Mr McDONALD:** Thank you very much for being here today. I have a couple of questions regarding the report. I recognise the \$3.4 million that has now been included in the state budget in a dedicated project team. Before the establishment of that team, who particularly was responsible for auditing dam safety? Was there an officer appointed?

**Mrs Dobe:** The project team that was established was just a project team to review and implement the recommendations of the Queensland Audit Office report. There has been a dam safety team under the dam safety regulator since the introduction of the legislation, since the Water Supply (Safety and Reliability) Act came in. There has been a long established dam safety regulatory team. The project team was just a special team that was established to make sure that we had appropriate response to the audit report.

**Mr McDONALD:** And address the recommendations?

**Mrs Dobe:** Yes.

**Mr McDONALD:** How many were in the dam safety team? There are another three people now, or is that project team stepping aside once the recommendations are done?

**Mr Cowley-Grimmond:** I think we have about 21 staff, and that is including the additional three FTEs. It is about 10 engineers and the rest are compliance officers or other sorts of support staff. Previously the audits would have been done by the engineers. Now they are done by a combination of the engineers and the compliance officers. Plus we can draw on expertise from other parts of the department where required. We have investigators who are also available to support the dam safety team when required.

**Mr McDONALD:** There are 21 plus those three now?

**Mr Cowley-Grimmond:** Twenty-one including those three. Previously it was 18.

**Mr McDONALD:** Go back to 2020. How many were there then? Was it similar?

**Mr Cowley-Grimmond:** It would have been about 18.

**Mr McDONALD:** That regulation around supply and safety—both are very closely intermingled. With regard to the safety issues that have been identified in the likes of Paradise Dam, obviously that was a safety driven process. There is also Wivenhoe Dam in terms of its safety. I understand that there are the engineering solutions where there are safety issues and I also understand that there are operational issues where Wivenhoe, for instance, is kept at a lower level at the present point in time. Could you take us through how Wivenhoe is operated in terms of flood mitigation versus safety and why it is currently at 45 per cent of the maximum 100 per cent level?

**Mr Cowley-Grimmond:** Wivenhoe Dam is a flood mitigation dam. It is operated differently from other dams. All dams provide some flood mitigation but it is usually passive in that they hold back water and slow down the flow of water. Wivenhoe is a gated dam where you can control outlets. When it is at 100 per cent then that means that the water supply compartment is full. It has a 'second compartment', which is a flood mitigation storage level which allows it to store about another million megalitres, and then above that is a dam safety compartment which is reserved for extreme floods where you are trying to protect the dam from risk.

The 90 per cent level has been set, and it is a combination because you have Somerset Dam upstream and Somerset Dam is also being upgraded. It has been lowered to 80 per cent and Wivenhoe has been lowered to 90 per cent, which is the full-supply level. That is a combination of Wivenhoe Dam needing an upgrade, but because you have a major dam upstream you have this risk of what they call a cascade failure. That is why those have been lowered to that level. It is the same at North Pine Dam, which is at about 68 per cent—again, because it is going through a dam safety upgrade. It just gives you an additional extra capacity in case you have a big flood event that goes through. In normal events like we experience usually, all of our dams are safe and are capable of withstanding those without any issues. It is for those very rare but extreme events that the upgrades are required.

**Mr McDONALD:** The only reason that Wivenhoe is down at 45 per cent now is the upgrades at Somerset?

**Mr Cowley-Grimmond:** No, it is a combination of both. It is at 90 per cent of its full-supply level at the present time. It does need an upgrade, but it is also reflecting the fact that you have a dam upstream that is also requiring an upgrade.

**Mr McDONALD:** How long is Wivenhoe likely to stay like that? Is it just until the completion of the upgrade?

**Mr Cowley-Grimmond:** Yes, once the upgrade is completed it will be returned to a full-supply level, based on the design selected for the dam. It depends on what Seqwater wants to do, but our expectation is that it would be restored to a full-supply level once the dam safety upgrade program is completed.

**Mr McDONALD:** That safety is just at Somerset, or Wivenhoe as well?

**Mr Cowley-Grimmond:** Both are undergoing the upgrade programs. We would expect both of them to be restored at some point once those upgrades are completed.

**Mr McDONALD:** When are they expected to be completed? I note that you said things are on track, but what sort of time frame are we looking at?

**Mr Cowley-Grimmond:** All of them are required to be completed by 2035. That is a hard end date. We have a process in our new safety assessments for referable dams where each year the dam owners will submit to us a report outlining when they are expecting to have them completed and justifying that time frame. Then we will make sure they are held accountable. We have only just received those. That is a regulatory requirement that came in on 1 October this year.

**Mr HART:** What is the date they are saying now?

**Mr Cowley-Grimmond:** I do not have that information to hand. We have had these for about five days and we are going through a process for 111 reports. It is not 111, but for those dams that require an upgrade we will be going through that with each individual dam owner and identifying whether the time frame they have selected is justifiable. Best practice is generally that dams take between five and 10 years to upgrade. They are a big, complex engineering and construction project.

**Mr McDONALD:** Could you take that on notice to get back to us with that information about Somerset and Wivenhoe?

**Mr Nielsen:** Sure. I could probably add that all dams need to be upgraded by 2035. That has been set as the date we need to get them all done by. As part of the recommendations of the QAO audit, we have updated our safety assessment guidelines. The reason for that is that I think it is important that we get a justification from dam owners for when they will upgrade their dams. That is the reports that we have received on 1 October. We have not processed them yet, because we also get all of the emergency action plan submissions on 1 October. We also get the self-assessments of the status of the dams and we have a regulatory time frame to address those and respond to those. We have had a bit of a backlog that we need to get through. Dam owners, Sunwater and Seqwater have a portfolio approach to their upgrades. They are able to start at the dam needing the upgrade first and get that done, then move on to the next, move on to the next and move on to the next. We are expecting that North Pine, Somerset and Wivenhoe dams will all be upgraded by 2035. I do not know if that answers the question.

**Mr McDONALD:** It assists, but it would be good to see them done sooner rather than later. That is why I asked the question about safety and supply, which are so closely intermingled. Wivenhoe Dam operating procedure when it commenced operation was 60 per cent with 40 per cent flood mitigation. Now we are at 45 per cent with 55 per cent so there is an enormous quantity of water that could be stored for urban supply or, dare I say it, agricultural uses like a great recycled water pipeline.

**CHAIR:** I do not think there is a lack of water at the moment.

**Mr McDONALD:** No, I know, but it is a great project that would be able to supply water for agriculture and then be switched to urban supply.

**CHAIR:** For the Lockyer Valley perhaps.

**Mr McDONALD:** A great idea for the Lockyer Valley. When I read recommendation 3 I was concerned about the lack of assessments, particularly those that are more than a decade ago in terms of the reviews. Was it a matter that these reviews that had not been undertaken by the operators were just a self-assessment that had not occurred, or was there some work that was deficient?

**Mr Nielsen:** The industry guidance is that a safety review is done every 20 years. A safety review is essentially going back and redesigning the dam considering current best practice engineering techniques. You do a 'what if'—what if we could build this dam again now, what would we do differently and what are the risks associated with the dam being what it is? That is done every 20 years as an outer limit.

However, we have found that as comprehensive inspections are done, or annual inspections—comprehensive every five years—if they reveal issues, then dam owners will do more investigation. Paradise Dam is a pretty good example of that where flood damage in 2013 triggered a special inspection which then triggered further investigations which led to identification of further concerns. Similarly for other dams, even though it is a 20-year safety review time frame, more often than not studies are done within that 20-year time frame to do that design assessment.

There was a mention of four dams which had not had their capacities assessed. In the past, it was not a regulatory obligation for those dams to do an acceptable flood capacity assessment. We have subsequently changed that. We do need those assessments done. We conducted those four assessments for those dams and found that those dams did meet their acceptable flood capacity.

**Mr McDONALD:** Did meet?

**Mr Nielsen:** They did, yes.

**Mr McDONALD:** In regard to Wivenhoe, is there any legislation that needs to change to see more flexibility in the operating procedures for Wivenhoe?

**Mr Nielsen:** I do not believe so. We have the flood mitigation manual for how you operate the dam during floods. We also have the temporary full supply level legislation where the minister can make a decision to temporarily change the full supply level if he or she thinks it is necessary.

**Mr McDONALD:** What sort of assurance would the minister need for that to occur in terms of, let's say hypothetically, going back to a 60 per cent level of full capacity?

**Mr Cowley-Grimmond:** The current 90 per cent supply level is set by Seqwater. They have the powers to adjust it for dam safety purposes. Temporary full supply level is where the minister can trade off water security versus the flood mitigation benefits and considers things like what is the weather forecast, what is the water security forecast et cetera. That is a decision for the minister who takes advice from the department, from Seqwater, from the Department of Environment and Science, and bureau forecasts. It is a public policy question of balancing flood mitigation against water security.

**Mr McDONALD:** Part of the reason for asking that is around the recommendations from the Floods Commission of Inquiry. Have all the recommendations been implemented?

**Mrs Dobe:** Yes.

**Mr Cowley-Grimmond:** Certainly the ones that we are responsible for have been addressed, yes.

**Mr MADDEN:** Ipswich West has a fair bit of area that is dramatically affected by flooding of the Brisbane River. My questions follow on from the questions from the member for Lockyer and they relate to what information is made available to the public on a daily basis by Seqwater with regard to Somerset Dam and Wivenhoe Dam. Before I ask those questions, I want to clarify some matters you raised, Mrs Dobe, in your opening address. What are the four privately owned dams that you did an audit on? You mentioned there were four privately owned dams.

**Mrs Dobe:** The Queensland Audit Office report—that is something they picked up in their audit; they are privately owned farm dams.

**Mr MADDEN:** Do you want to take it on notice?

**Mrs Dobe:** Yes. We can probably answer it by the end of the session.

**Mr MADDEN:** My next question is to do with something you said, Jarrod. You talked about passive dams and active dams with regard to flood mitigation. Is it the case that the only two active flood mitigation dams we have on the Brisbane River catchment are Somerset Dam and Wivenhoe Dam?

**Mr Cowley-Grimmond:** Yes.

**Mr MADDEN:** At the moment, if I go onto the SEQ website, it will tell me that Somerset Dam is sitting at 80.4 per cent and Wivenhoe is sitting at 90.2 per cent. The difficulty with that is they are really figures that apply to passive dams. They are dams where you want to know how much is in the dam. My constituents want to know how much flood capacity is in the dam and also what drinking water capacity is in the dam.

The Seqwater site does make a small concession in that regard, and it is a recent innovation. When a dam is accessing its flood mitigation capacity, it puts a little line in that says, 'Accessing flood mitigation capacity,' and today Somerset Dam is accessing flood mitigation capacity and Wivenhoe Dam is not accessing flood mitigation capacity. However, that could change tomorrow. It does not give any percentages. Does the department have any capacity to instruct Seqwater not only to put the drinking water capacity on their website but also to say what the flood mitigation capacity is?

To give you an idea, Wivenhoe Dam is designed to have about two million megalitres of flood mitigation capacity. My constituents want to know what the flood mitigation capacity is for both those dams. My question to you is: does the department have any capacity to instruct Seqwater to amend their website to not just say whether a dam is accessing flood mitigation capacity but actually say the amount? That is assuming that a lot of the time it will be, say for Wivenhoe Dam, 2,050,000—it will be always in that capacity. The question is: do you have any capacity to have Seqwater actually give the information to my constituents that they want to know?

**Mrs Dobe:** The shareholding minister is our minister. We work regularly with Seqwater on a range of matters, so we can talk to them about communications. We have found over many years that these three different compartments are difficult to communicate publicly. When in times of flood, it is very hard to explain why you are over 100 per cent.

**Mr MADDEN:** Exactly.

**Mrs Dobe:** Then when in times of drought, it is hard to explain: if you put the whole capacity in, it is hard to explain why you are down to very low levels, whereas it is actually more than half of the drinking water compartment level. There has always been a balance in how do we explain this. Certainly we can work with Seqwater on that.

**Mr MADDEN:** Also, on the issue of using percentages as opposed to megalitres, as I said, it works well with a passive dam, but it does not work well with an active flood mitigation dam. It works fine with Atkinson Dam, it works fine with Moogerah Dam, but it does not work fine with a flood mitigation dam. I would very much appreciate, Mrs Dobe, if you could speak to Seqwater about giving my constituents the information they really want.

I can tell you that leading up to a flood event, every day, maybe four or five times a day, we are looking at those Seqwater sites. We do like it when it says 80 per cent of drinking water capacity—we actually like that—but we would prefer to see the flood mitigation capacity in megalitres, not in Brisbane



percentages. I would very much appreciate, Mrs Dobe, if you could pass that onto Seqwater. It is a very simple thing. The little feature currently utilising flood storage capacity is a new feature. We like that to know that, but we would prefer to know what the actual volume of flood mitigation capacity was. The fact that it appears and disappears is an issue.

**Mr McDONALD:** I think we should have percentage and volume.

**Mr MADDEN:** Fine, yes—both.

**Mr Nielsen:** I wanted to make a comment on that. You are absolutely right: trying to communicate these things is very challenging. Particularly when are you talking about flooding, it is not the megalitres; it is the flow rate of megalitres per hour or per day. I am very aware that this kind of communication is an issue. I can let you know that at the upcoming ANCOLD conference at the end of this month I know that there is one paper which is talking about exactly this very thing. We will continue to think about the best ways to communicate these kind of things associated with dams.

**Mr MADDEN:** On your point, Mr Nielsen, currently today Atkinson Dam is overtopping—it is putting water into the Lockyer Creek which goes into the Brisbane River—but the notification does not give any indication of flow rate. A flow rate of, say, 50,000 megalitres is a big difference to 10,000 megalitres. I am sure it would be of interest to the people down the river—at Karalee, Borallon Point, Chuwar, even Fernvale and Lowood—to know the flow rate. Mrs Dobe, could you pass that on to Seqwater? As a resident who owns a block of land that flooded in 1974, I look at those notices, but I would like a bit more information. Thanks very much.

**Mr HART:** Jarrod, you said before in your answer that all of the recommendations that apply to the department from the flood review have been carried out. It sounds to me like there are a number of others that have not. Does the department monitor those recommendations to see whether they have been carried out?

**Mr Cowley-Grimmond:** We report regularly to central agencies on the implementation of recommendations that have been made from all independent reviews. We have done it for the Paradise Dam Commission of Inquiry and the Floods Commission of Inquiry. As far as we are aware, all of those recommendations have been addressed. The point I was making is that we have certainly addressed ours.

**Mr HART:** As part of the dam safety measures, will the dam walls at either Somerset or Wivenhoe dams be raised?

**Mrs Dobe:** That is going to be part of the consideration of the business case and the engineering design assessment. They will be looking at a range of considerations. The dam safety is the core consideration. They will be looking at water security and potentially flood mitigation as well.

**Mr HART:** So no decision has been made?

**Mrs Dobe:** They are still in the engineering and investigation phases.

**Mr HART:** How was the date of 2035 picked for these dams to be upgraded?

**Mrs Dobe:** With respect to the 2035 date, the requirement to do the dam safety upgrades was in 2005. That was when the Bureau of Meteorology gave us information that the amount of rain that was going to be in these really large flood events was going to be much larger rainfall events than had previously been anticipated. Then there was an assessment done of all the dams across Queensland that were referable dams, and they were prioritised into categories according to the risk. There was a decision made that certain dams had to be upgraded straightaway, and other dams had to meet other time frames. Then the time frame was decided upon that the dams that were of least risk had to be upgraded by 2035.

**Mr HART:** That was in 2005?

**Mrs Dobe:** Yes.

**Mr HART:** Has that been reassessed since then?

**Mr Nielsen:** Yes. I have provided this as part of the attachment. This is now our new guideline. By 1 October of every year I am asking dam owners to justify their upgrade time frame. This guideline provides them with some industry guidance. We provided a bit of research and a bit of analysis of typical time frames to deliver dam projects in Australia and given some guidance on some of the things to consider when justifying that. I am expecting that once we assemble that information I will be able to provide justifiable time frames for upgrades of the dams.

**Mr HART:** You said there were 60 category 2 engineering reviews carried out. Are they desktop audits or are they onsite audits, or how does that happen?

**Mr Nielsen:** A category 2 dam is one that has more than 100 population at risk, so it is the big dams. With higher consequences they have to have a more onerous dam safety management program and that includes doing annual engineering inspections. That inspection is done typically over one or two days and then they prepare a report. That report is submitted to the regulator and we review it. That is the 60. Then every five years we get the comprehensive inspections. They typically take more than one or two days for the engineers to be out crawling over the dam and then it is a much more thorough comprehensive report that we receive.

**Mr HART:** For those 60 engineering reviews, do any of your engineers go onsite for those? They are desktop audits, are they?

**Mr Nielsen:** No, we do not go to every single annual inspection, but we do go.

**Mr HART:** If there is anything of concern you send someone out?

**Mr Nielsen:** Yes, and also if we have been to the dam engineering inspection the year before we may not go in the coming year. We will go to a different one.

**Mr HART:** Deputy Director-General, you said in your presentation that you would not let the capacity to pay affect dam safety. What happens if someone does not have the capacity to fix their dam? Does the department take it over or take responsibility for it?

**Mrs Dobe:** The requirement is for the dam owner to get the dam safety upgraded. If we were in a position where the dam owner just refused or did not have the capacity to pay, we would work with them on their financial arrangements. It depends what type of dam owner it is. We have already been working with councils who own referable dams on different sources of funding that they might be able to get for their dam safety upgrades. It depends on the dam owner. We do have emergency provisions for dam management but that is in the event of an emergency disaster event. We have not had a situation where a dam owner has not been able to afford the upgrade.

**Mr HART:** Emergency provisions: is that in the form of money?

**Mrs Dobe:** No, this is in the middle of a disaster event if the dam owner is not taking appropriate action to make the public safe downstream.

**Mr HART:** You have the regulatory capacity to step in?

**Mrs Dobe:** Yes.

**Mr HART:** Can you give us a sense of the sort of engineering qualifications that people in the dam safety department have—just roughly? I do not want specifics.

**Mr Nielsen:** Just before I do, the four dams that we did the AFC assessments for were Lake Mitchell Dam, Andrew Deguara dam, Haven Dam and Reck Dam. We have to have Registered Professional Engineers of Queensland. Of the 11 engineers in the team, six to seven are RPEQ. Those who are not RPEQ are being encouraged to become RPEQ, so they are on a development pathway to achieve that. That is an absolute requirement. Also as part of our regulatory role we spend a lot of time on training and education. Every six months—at least we try to every six months, pending COVID disruption—we run dam operator training courses. We consistently get those sold out.

**Mr HART:** Deputy Director-General, you said that we comply with ANCOLD regulations but we exceed it in some places. What do we exceed it in?

**Mrs Dobe:** I will have to pass over to Chris on the details of that.

**Mr Nielsen:** I do not just reflect on ANCOLD when I am looking at these guidelines; I reflect on industry guidelines around the world in other jurisdictions. On this one in particular I took a few hints from the US Army Corps of Engineers, which is another well-recognised international jurisdiction. Generally, though, I would say that ANCOLD provides guidance but as a regulator we need to provide some more certainty and some more specificity about the dam safety standards. That is where we go beyond ANCOLD because they do not; they will stay as a more general guide and we need to be more specific.

**Mr SMITH:** If I could take you back to the emergency action plans, you said they need to be updated every year; is that correct?

**Mr Nielsen:** Reviewed.

**Mr SMITH:** Is that a calendar year or a financial year?

**Mr Nielsen:** It is 1 October. We require that pre wet season preparedness assessment.

**Mr SMITH:** You said that 86 have been submitted. Does that mean there are another 25 that have not been submitted?

**Mr Nielsen:** No. That number, 86, is the number that we have actually had put on our desks saying, 'We have made changes. You need to review and approve and then resubmit and republish on our website.' By 1 October we also get self-assessments, and a number of those dams are saying they have not needed to make any change. Quite often there are changes made to emergency action plans by 1 October in preparation for the wet season, but it is usually the contact details. In particular it is very important that these documents, particularly the unredacted versions, have the right names and contact numbers of people who are going to be in the emergency response.

**Mr SMITH:** The 86 emergency action plans that have been submitted equal 86 dams; is that correct? There are 25 who have done a self-assessment and said that they do not need to do any further review?

**Mr Nielsen:** For the year, yes.

**Mr SMITH:** Who checks them to say, 'Yes, your self-assessment is accurate'?

**Mr Nielsen:** We do. Obviously we cannot check every contact number. We do occasional spot checks where we ring people on the numbers and see if they are right but, yes, it is a self-assessment. At the same time, the maximum time frame for an EAP approval is five years and we will reduce that if, for example, we think there should be some progressive changes in the future for that emergency action plan or if the populations are rapidly changing downstream. For example, if we were to find that there was a major subdivision downstream of a dam, we would get back in touch with the dam owner and say, 'You need to revise your EAP.'

**Mr Cowley-Grimmond:** Every EAP is approved by the department. For example, in some of the cases we might have had an EAP that has been approved by the department in, say, July or September so when the 1 October date comes through that has been signed off. So there is a rolling process of reviews for these EAPs, and we do give feedback to dam owners on their EAPs to say, 'This could be improved through the addition of X, Y, Z.'

**Mr SMITH:** Is there an EAP, or one of those 25, that is currently outstanding, or is the department satisfied with all 111 dams and their emergency action plans currently?

**Mr Nielsen:** No. Apologies, but I have not as yet got the feedback for the 1 October plans this year and where we are at, but we are very sharp on that. We make sure that every dam has its EAP up and running before it starts raining.

**Mr SMITH:** When would you expect to have all of that information provided? I appreciate it has only been nine days.

**Mr Nielsen:** We have 10 business days to review and respond after 1 October.

**Mr SMITH:** We are close.

**Mr Nielsen:** Yes.

**Mr Cowley-Grimmond:** We do take compliance action in this space through warning letters and escalation pathways.

**Mr SMITH:** I appreciate you bringing us to that point, because definitely something that came out through the Queensland Audit Office was their concern about what they considered almost a lack of compliance in terms of submissions being handed in late. There is one I want to refer to. I am happy if these questions are taken on notice. They might need a more full answer. The Audit Office put examples of late and overdue compliance documents in their report. It is figure C1. There was Lenthalls Dam, which is under the Fraser Coast Regional Council. I will declare that I have two personal friends on that particular council. Their five-yearly comprehensive safety inspection was overdue by 18 months and 20 days and the department took no compliance action. Chinaman Creek Dam, under the Cloncurry Shire Council, had a 20-year safety review that was four years, seven months and 26 days overdue and the department did not take compliance action. Forest Lake Dam, under the Brisbane City Council, was two years, two months and 27 days overdue and there was no compliance action taken. I was wondering if maybe on notice we could get an answer as to why there was no compliance action taken against those councils.

**Mr Cowley-Grimmond:** The upgrade to our referable dam register will make it much easier for us to track these and we have put in place compliance pathways and escalations going forward. We acknowledge that this is a finding of the QAO. These dams are all now back in compliance. We have addressed all of those issues.

**Mr SMITH:** Are you happy to take on notice and provide a more fleshed-out answer as to why no compliance action was taken against those councils for submitting such late and overdue EAPs?

**Mr Nielsen:** We are happy to. I would also say that there is more likely than not some correspondence that went on with some of these as well. I certainly own these overdue dates. I am not happy about them.

**CHAIR:** If you could give some more information on the history of those particular ones, we will be in contact with you on that.

**Mr HART:** We have had some issues with hacking into IT systems lately. Is that part of the department's dam safety monitoring, to make sure that IT is up to scratch?

**Mr Nielsen:** Yes. I guess there are a couple of things there. Particularly for critical dam information, we require it in hard copy. The dam owner needs to keep critical information in hard copy as well as soft copy. We are the same: we have large archives of hard copy information for dams.

**Mr HART:** I am more considering control systems—opening gates and things like that.

**Mr Nielsen:** I probably would say that we do not specifically highlight it as something that we are looking for, but we are aware that there are multiple redundancies in all operational systems at dams. For gated dams their dam operators are onsite.

**Mr Cowley-Grimmond:** For drinking water providers—and most dam owners are also drinking water providers—under our drinking water regulatory framework cybersecurity risk is required to be addressed in their drinking water quality management plans so that they have in place appropriate cybersecurity assessments and processes to prevent that sort of thing. It is a different regulatory regime. Most of the dam owners are also registered drinking water providers so that would be required.

**Mr HART:** This committee has had reports from the Auditor-General for years now about IT issues at dams of Seqwater and Sunwater. The department is keeping a close eye on that?

**CHAIR:** Bear in mind, member for Burleigh, we have dealt with this.

**Mr HART:** It should be part of dam safety, though.

**CHAIR:** It is, but I think it is something we have dealt with previously. Can I ask our witnesses to briefly provide something on that?

**Mrs Dobe:** I do not think our dam safety provisions specifically look at cyber safety for dam owners. That is matter for the dam owners themselves.

**Mr HART:** It is maybe something you want to consider.

**Mrs Dobe:** Thank you.

**Mr McDONALD:** Before you mentioned a business case and an engineering process for safety and also raising the dam wall. When is that work expected to be complete?

**Mrs Dobe:** I am not sure about the completion date. I know that the Somerset one is underway.

**Mr McDONALD:** Could we find that out? As Mr Nielsen said, it could take five years to complete some of these safety upgrades. It would be great to know.

**CHAIR:** We can find that out. It sounds like there is a continual ongoing improvement program. I will keep that observation to myself.

**Mr SMITH:** The QAO report had a table with figures of people at risk downstream of the dam. Obviously Paradise Dam is very important to our community and their health and safety. In that report they had it at 40,520 people. They were departmental figures. I was wondering at which date that was last recorded by the department and if there has been an update. Again, I am happy to place that on notice.

**Mr Nielsen:** I cannot recall.

**CHAIR:** The time for this session has expired. We have a number of questions on notice. We will send a copy of those questions to you. We are looking for responses by Friday, 21 October. That concludes this briefing. Thank you to everyone who has participated today. Thank you to our Hansard reporters and our secretariat. A transcript of these proceedings will be available on the committee's webpage in due course. I declare this public briefing closed.

**The committee adjourned at 11.03 am.**