

Learnings from Whakaari.

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Agenda

1. Quick Recap – The Parties, Legal judgements (and thoughts)
2. Tourism on Whakaari – threats that needed to be managed
3. Overview of the safety processes and the causes of the tragedy
4. Managing natural hazards. What is Safe?
5. Risk tolerability and what factors should be considered
6. Risk evaluation decision criteria (and who decides)
7. A few other lessons:
 - a) Risk communication
 - b) Risk reviews and Triggers
 - c) Shared duties

Note: All opinions expressed are my own (we do NOT represent WorkSafe or others).

The Parties

- **Whakaari Management Ltd (WML)** – Managed access to island. Established licence agreements with Operators (includes commission per visitor).
- **Whakaari Trustee Ltd (WTL)** – Owned the island
- **Andrew, James and Peter Buttle** (Officers) - the directors of WML and WTL
- **White Island Tours** - Boat Operator
- **Volcanic Air Safaris Ltd, Aerious Ltd and Kahu Ltd** - Helicopter Operators
- **National Emergency Management Agency (NEMA)** Gov agency for civil defence / emergency management.
- **Bay of Plenty Emergency Management** – Local CDEM group (under Council)
- **Geological Nuclear Sciences Ltd (GNS)**. Crown owned entity that monitors NZ natural hazards. Publishes the Volcanic Alert Levels.
- **ID Tours and Tauranga Tourism Services** – Tour booking agencies

- Note: Operators pleaded guilty.

Legal judgements

NEMA charge dismissed (same basis for dismissals of GNS and booking companies)

- Section 36(2) must be read with 36(1) and purpose of Act
- Duties under 36(2) need to arise from a PCBUs “work activity”, not the “work product”.

WML Officer charges dismissed

- Charges did not adequately particularise the case against each Officer. Case then limited to “the Officers failed to obtain expert advice on how WML could ensure that guided tours of Whakaari were conducted safely”
- Judge decision - there was a lack of evidence regarding what happened behind the scenes (e.g. director discussions, dissent)

Legal judgements cont.

WML Judges decision (*Note: WML appealing*)

- WML found guilty under s 37 (Duty of PCBU who manages or controls a workplace). \$1.045 mill fine. \$4.88 mill reparation.
- **Context very important here.** Controlled access thru licence agreements. Generated income. Participated in operator user group meetings.
- Key failure was providing access to an active volcano and not engaging expertise to determine if it was safe to do so.
- *“To be caught by s 37, a PCBU must in fact be exercising active control or management of the workplace in a practical sense. Owning it is not enough. Making money from it is not enough. Merely being able to manage or control a workplace, but not doing so, is not enough.”*

Judgements – My personal thoughts

NEMA decision

- Unfortunately, outcome does not appear aligned with current accident causation theories / prevention practices. It could be argued that “work product” has a bigger impact on health and safety than work activity.
- The new Act was also supposed to capture modern work arrangements, yet duties along the supply chain appear limited.

Officer dismissals

- Good governance practices not tested.
- Reasons for “Lack of evidence”. Positive duty

Section 37 duty

- Appears to be narrowly applied – “must be controlling in a practical sense”. Does this mean if you can control (and should be), but don’t, you avoid the duty?

Whakaari – Many threats needed to be managed

Hazard	Key Threats	Top Event	Potential Consequences
<p>Active Volcano Large body of hot magna deep beneath the Island. Water can enter magma chamber causing pressure to build.</p>	<ol style="list-style-type: none"> 1. Hazardous volcanic environment. 2. Can't predict eruptions. 3. Volcanic activity can change very quickly 4. Lack of awareness of the PDC risk. 5. Increasing number of visitors / vulnerable tourists 6. People being close to active vents. 7. Remoteness and inaccessibility 8. Lack of infrastructure / facilities 	<p>Multiple people in volcano crater during an eruption</p>	<p>Multiple fatalities/serious burns/serious injuries (due to lava bombs/blocks, ballistic projectiles, pyroclastic density currents (PDC)).</p>

Whakaari – Overview of Tourism Safety Processes

- Whakaari Management Ltd (WML) licenced multiple Operators to take tourists to the island
- Agreements stated that Operators were responsible for safety, including gaining independent advice regarding risk, providing PPE and attending user group meetings.
- Operators had safety systems, had passed relevant CAA / Maritime audits and White Island Tours had passed adventure activity audits.
- Volcanic activity was monitored by GNS. The volcanic alert level had moved from VAL 1 to VAL 2 three weeks prior to eruption.
- Emergency management – believed to be managed by BOP CDEM / NEMA. Draft plan established. Shipping container and emergency supplies on island.
- Discussions occurred amongst Operators and volcanic changes reported to GNS.

Causes / Contributing factors

1. Sudden eruption occurred generating a pyroclastic density current (PDC)
2. Large number of tourists allowed access to crater, with groups going close to active vents.
3. Operators/WML had **not** fully understood the risk associated with an eruption/PDC
4. WML did not believe they had a duty to manage safety
5. The level of risk was not tolerable for tourist activities on the island
6. No formal / quantitative risk assessment completed.
7. No detailed analysis or resourcing of volcanic risk control options (restrictions, exclusion zones, safe distancing, alarms, shelters, etc)

Causes / Contributing factors cont.

1. Volcanic risk management was not examined during the adventure activity audits.
2. Over-reliance on BOP CDEM to stop activity if it was too dangerous, and to prepare suitable emergency plans.
3. No formal risk review despite warning triggers (experts and incident).
4. Governance – inadequate resourcing of volcanic risk management. Lack of appropriate assurance
5. Govt agencies - inadequate oversight. Investigation/follow up of past concerns.

Understanding risks associated with natural hazards

1. In NZ, natural hazard management is led by Government, but most functions delegated to local councils (under numerous Acts)
2. This does not reduce the PCBU's duty of care.
3. If the risk is well-known, the primary focus should be on managing the risk so far as is reasonably practicable (and preparing for possible emergency responses).
4. However, if the context/situation is unique (e.g. taking tourists into crater of active volcano) or PCBU activity is likely to increase the level of risk for workers / others (e.g. increasing tourist numbers), it is essential to understand the risk exposure.
5. Is the level of risk acceptable or tolerable?

What is Safe? Understanding the “level of risk”

- What is “Safe” is undefined. It often comes down to a “level of risk” that people are happy to accept or will tolerate.
- This level can be expressed in a variety of ways. E.g. Annual individual risk of a fatality for a worker.

Quick Survey - What level of risk would be tolerable for your workers?

“The annual individual risk of a fatality should be.....

Level of risk to tourists

- What is acceptable will change depending on who is being exposed.
- **What level of risk do you think would be acceptable for a tourist visiting Whakaari? (In terms of risk of fatality during their visit).**

Another measure is **individual fatality risk per million experiences** (Taig). NZ Jetboating is between 0.01 to 1. White water rafting is considered high at 10. 2013 GNS presentation indicated that visiting Whakaari at the time (VAL 2) was above 100.

What other factors should be considered to determine if the “level of risk’ is tolerable?

Risk tolerance – Some considerations

- **Severity Consequences** – Number of fatalities, serious injuries, disability, health impacts. etc. Is it a societal risk?
- **Vulnerability** – Who is being exposed? How frequently? Are they considered vulnerable? (Elderly, Children, People with disabilities, etc)
- **Individual knowledge** of the risk and their competencies to manage
- **Potential benefits** – What reward is being gained for taking the risk?
- **Perception of risk** vs Actual risk
- **Effectiveness of Controls** – Ability to manage the risk
- **Ability to respond** (e.g. remote island, no infrastructure)
- **Legal requirements. Society expectations**
- **Risk Velocity and Unpredictability**

**WML level of risk
very different from
GNS or operators**

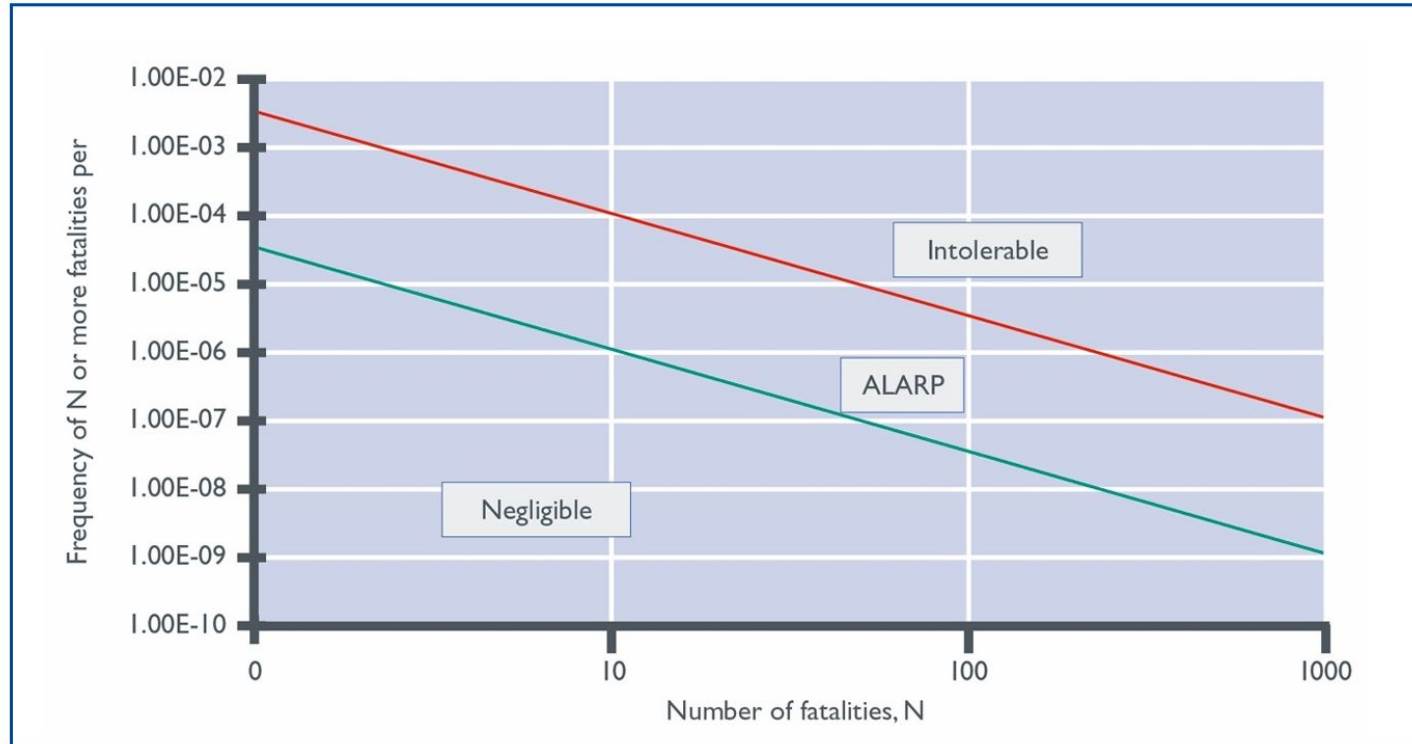
Risk evaluation decision criteria

Context specific! (numerous factors to be considered)

Decision making risk criteria will be different for:

1. Individual risk (worker)
2. Participant / Visitor risk per experience (e.g. likely number of fatalities per 1 million experiences)
3. Societal risk (risk of multiple fatalities. E.g. > 10)

Societal Risk Criteria - Example



Societal Risk Criteria. Modified from NSW Government 2011

Who should decide "Tolerability" for activities that increase exposure to natural hazard events?

- The tourists doing the activity?
- The PCBU in control of the activity (e.g. exposing the tourists to the hazard)? Or its Officers?
- The PCBU in control of the workplace or hazard source? Or its Officers?
- The local Civil Defence? Or NEMA?
- WorkSafe? GNS? Others??

Risk Communication

- Effectively communicating risk is **not** as easy as it sounds!
- **Website (White water rafting):** *“Participation in rafting activities involves a degree of risk and the rafting operator cannot absolutely guarantee participants' safety”*
- No further information in Terms and Conditions
- **Website Terms/Conditions (Cycling):** *“You acknowledge that participation in the Event can be **inherently dangerous** and that **You may be exposed to certain risks** during the Event including, but not limited to, overexertion, **equipment failure**, dehydration, **serious accidents**, exposure to a range of lighting effects including laser and strobe lighting and risks associated with the course and adverse weather conditions. **These risks can and often eventuate and they may result in You being personally injured or killed ”***

Risk communication considerations

If it is to enable informed consent, we should:

- Clearly communicate the specific hazards and associated risks
- Provide information to enable some understanding of the “level of risk” (if possible)?
- Explain how the risk will be managed and what is required from the participant.

- **Notes:**

- Most people will not understand what probabilities mean.
- Gaining consent does not change PCBU duties to manage the risk SFAIRP

Risk Reviews and Triggers

- Always consider the **potential consequences** of incidents. If significant, ensure understanding of how it occurred and the implications for the risk assessment.
 - Has the level of risk changed (likelihood or consequences)?
 - Has confidence in control effectiveness changed?
- Review periodically and after any warning signs (control failure, concerns raised)
- Engage experts if context or risk is unique
- Take time to understand the risk and controls. As knowledge changes, risks need to be re-assessed.
- Check that you are following recommended practice. What are others doing (in a similar context for similar risk)?

Shared Duties - Learnings

If managing significant risks (and in particular, societal risks) we recommend:

1. Involve relevant stakeholders / govt agencies
2. After consultation, clearly define / document responsibilities, ideally in both plans and contracts/MoUs (shouldn't be informal / ad hoc process).
3. Plans should include:
 - a) Critical controls and operating parameters (and which party/position is responsible).
 - b) Ongoing communication processes and how the risk and controls will be monitored
 - c) Emergency response plan and how it will be tested
4. Review periodically and after any event.
5. Seek assurance – ensure you understand the scope / limitations of any audit/review. What risks, controls and processes are being examined?

Thanks for listening

- Any questions?
- If you found this presentation useful, we also have other sessions to help educate Officers. Contact richard@gibsonrs.nz