

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Board of Inquiry appointed under s146 of the Resource Management Act 1991 to consider an application by Mighty River Power Limited for resource consents to construct, operate, and maintain a wind farm at Turitea

EVIDENCE OF GAVIN WILLIAMSON

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1. INTRODUCTION

Qualifications and experience

- 1.1 My name is Gavin Williamson. I am employed by Mighty River Power as its Hydro Generation Manager.
- 1.2 I hold the degree of Master of Science (First Class Honours) from Massey University, which I obtained in 1986.
- 1.3 I have over 16 years' experience in the New Zealand environmental management sector. I have worked for Mighty River Power since 2004, where I was initially employed as the Environmental Project Manager. Prior to my employment at Mighty River Power, I held a range of environmental positions in private companies such as Fletcher Challenge Forests Limited, and statutory organisations, including the Department of Conservation, the Fish & Game Council, and a District Council.
- 1.4 In my current role I have responsibility for the operation of Mighty River Power's Waikato hydro system. This system comprises 8 dams and 9 power stations with a total installed capacity of 1042MW. Combined, these assets produce on average 4,100GWh and 13% of New Zealand's electricity demand yearly.
- 1.5 I am also responsible for compliance with the relevant health and safety, environmental and quality standards. This includes ensuring that these assets comply with all necessary legislation, local government planning documentation, and all resource consents that relate to their operation.

Purpose and scope of evidence

- 1.6 The purpose of my evidence is to describe Mighty River Power's environmental policies and compliance record in respect of its existing assets. In particular, I will address Mighty River Power's:
 - (a) General environmental policy;
 - (b) Environmental Management System (EMS), including its:
 - (i) Scope and key responsibilities;

- (ii) Objectives;
 - (iii) Processes for identifying and minimising potential areas of risk;
 - (iv) Implementation of the EMS and Compliance Measures;
 - (v) Monitoring and Corrective Procedures; and
 - (vi) Emergency Processes.
- (c) Proven track record in terms of environmental compliance and project management.

1.7 I am authorised to give this evidence on behalf of Mighty River Power.

2. MIGHTY RIVER POWER'S GENERAL ENVIRONMENTAL POLICY

2.1 Mighty River Power prides itself as a well-managed, environmentally responsible generator, wholesaler and retailer. In creating sustainable value from its relationships and resources Mighty River Power is committed to caring for the environment in which we work and live, and to sustaining its quality for future generations.

2.2 This vision is contained in Mighty River Power's environmental policy (**Annexure 1**), which is common to all sectors of Mighty River Power's business. This policy sets out the actions Mighty River Power will take to achieve this vision. These include Mighty River Power's commitment to:

- (a) continue to prioritise protection of the environment in accordance with its commitment to sustainable development;
- (b) continually improve its environmental performance and use of resources;
- (c) being accountable for action plans to deliver environmental improvements, and allocation of resources to achieve these plans;
- (d) minimise environmental effects, including emissions and impacts from its operations through effective monitoring, and continual improvement of performance; and
- (e) promote employee, contractor, and community awareness of environmental issues through on-going training, communication programmes, and external reporting of its environmental performance.

2.3 Mighty River Power's general environmental policy has been in place since August 2006 and has proved to be an excellent method of guiding its behaviour and actions in respect of the environment since then. It provides clear guidelines for environmental practices at Mighty River Power and has assisted the company to maintain its exceptional track record as it operates in a range of environmentally sensitive areas. These practices will be continued at Turitea.

3. MIGHTY RIVER POWER'S ENVIRONMENTAL MANAGEMENT SYSTEM

3.1 Mighty River Power's EMS provides the practical support for, and details the processes and procedures to be adopted, to give effect to our general environmental policy.

3.2 Although the EMS is based on the requirements of the International Standard Organisation (ISO) Standard 14001:2004 Environmental Standard, Mighty River Power is certificated to Enviro-Mark NZ Diamond Standard.

3.3 Enviro-Mark NZ is a NZ EMS accreditation which involves five levels – Bronze, Silver, Gold, Platinum and Diamond – with Diamond being the highest level.

3.4 Mighty River Power has held Diamond certification since 2007 and we are audited annually to maintain this certification. Our current certification is valid until 11 December 2009.

3.5 The purpose of the EMS is to:

- (a) provide leadership and direction on environmental issues;
- (b) maintain focus on the concept of the "community license to operate" including with neighbours, Iwi and community groups;
- (c) maintain an active interaction with stakeholder management processes;
- (d) promote awareness of the concept of sustainability;
- (e) maintain and improve the net present value of the assets;
- (f) support marketing strategies that give market advantage to sound/superior environmental performance;
- (g) facilitate the continued use of sustainable energy sources;

- (h) maintain or improve the operating environment with regulatory authorities;
 - (i) establish a system for verifying and reporting on consent compliance; and
 - (j) maintain an assurance system for standardising and verifying environmental performance including providing a structured means of closing information gaps.
- 3.6 In order to achieve this purpose, the EMS identifies the scale, duration, intensity and frequency of effects, and as such, assists in assessing the risk of these effects occurring.
- 3.7 The EMS is then able to be used to manage risk by identifying, controlling and reducing individual risks in a structured, methodological way.
- 3.8 When the construction of the wind farm is complete, and is ready to commence operation, the site will be handed over for management by the Generation Group. From this point in time onwards the scope of the EMS will be widened to include the wind farm site.
- 3.9 Environmental aspects and impacts (risks) pertinent to the site will be identified by subject matter experts (SME's), and included in an internal register. This register will identify the environmental consequences of the site's activities, relevant legislation, and the controls in place to manage the risks identified.
- 3.10 Annual environmental objectives and targets for the site are then established, to ensure (i) environmental compliance is maintained, and (ii) continuous improvements to the site's environmental performance are promoted.

Scope and key responsibilities for the EMS

- 3.11 The CEO is responsible for signing and therefore endorsing the Environmental Policy. It is the responsibility of Management to ensure this policy is communicated and implemented by all staff.
- 3.12 Management teams have the overall responsibility and authority to ensure all requirements of the EMS are identified, developed and documented.
- 3.13 EMS responsibilities of these management teams includes:
- (a) defining the responsibilities, authorities and interrelations of all personnel who manage, perform and verify work within Generation;

- (b) ensuring that a mechanism for monitoring work processes and outputs, so that objectives are consistently met is in place; and
- (c) regular review, of the systems and development within the Integrated Business System, including:
 - Quality
 - Health and Safety, and
 - Environmental Management Systems.

3.14 Process Owners provide appropriate documentation that describes the systems and procedures operating within Mighty River Power Generation.

3.15 The EMS is applicable to all of Mighty River Power's generation activities and at all levels of management. As set out in the general environmental policy, at the highest level, the Generation (including wind) and Geothermal Managers are required to identify and quantify major risks, as a part of the ongoing established risk management system.

3.16 The management representative for the EMS is responsible for ensuring that objectives and targets (as outlined further below) are created and documented, that those are achievable, monitored and completed within a specified time period.

3.17 All staff and contractors of Mighty River Power are responsible for ensuring that the EMS is adhered to. The EMS is reviewed annually by the Management team to ensure that it is effective and is continually improved.

EMS Objectives

3.18 General and site-specific EMS objectives are developed by SMEs within the EMS Team, to ensure risks identified are being properly managed. These objectives are reviewed on an annual basis. Site-specific objectives will be developed for the Turitea wind farm when it becomes an operational site.

3.19 Once key objectives are agreed upon, Site Managers (or their delegates) provide a list of environmental targets that relate specifically to these objectives for each generation site.

3.20 The targets are discussed with the EMS team, and ranked in accordance with level of risk, achievability, and any associated resource implications.

- 3.21 Once the annual objectives and targets have been approved by the Management Teams, they are published and communicated to the business via the 'EnerNet' intranet site and internal communications systems e.g. newsletters.
- 3.22 Monitoring of targets is undertaken on a regular basis throughout the year to ensure each target is met within the stated timeframe.

Processes for identifying and minimising potential areas of risk

- 3.23 One of the key components of the EMS is a Regulatory Requirements Register which is used to ensure that the system includes clear and effective measures for identifying areas requiring compliance.
- 3.24 The Regulatory Requirements Register provides a framework for ensuring compliance with relevant legislation and other regulatory requirements applicable to all generation activities, including Acts and Regulations, District and Regional Plans, resource consent conditions, relevant codes of practice and applicable industry standards.

Implementation of the EMS and Compliance Measures

- 3.25 Mighty River Power's procedure for implementation of the EMS is contained in a number of documents that form parts of the EMS, the Quality Management System, and the Risk Management System.
- 3.26 The overall structure and responsibilities of staff/employees are presented in organisation charts and position descriptions. In addition, these are also included in document 'QM40 Responsibility, Authority and Communication', a copy of which is attached as **Annexure 2**.
- 3.27 All relevant staff are trained in the importance of the implementation of the EMS as part of their orientation at Mighty River Power upon employment, and as necessary throughout their continued employment.
- 3.28 Operations and activities that are associated with potential significant environmental effects are identified and appropriate operating instructions implemented.
- 3.29 Resource consents and documentation are housed on an external platform called CSVue. This system provides a framework to support the EMS and help ensure compliance with statutory requirements and resource consents. CSVue is complementary to in-house accountability for consent conditions and is used as the reference database for consent

information. Responsibilities and reminder dates for compliance actions are automatically sent to the person with the accountability. In this fashion, it ensures we do not miss key reporting timelines and expiry dates for resource consents.

Monitoring and Corrective Procedures

3.30 Key characteristics of Mighty River Power's operations and activities that impact on the environment are monitored and measured on a regular basis pursuant to resource consent conditions, and in accordance with industry best practice. Monitoring is undertaken as required by the individual consent, and ranges from monthly to annually.

3.31 Mighty River Power also has in place a comprehensive 'Audits and Process Review' procedure, which is discussed in detail in the document QM52 – Audits and Process Reviews, a copy of which is attached as **Annexure 3**.

3.32 The purpose of the Audits and Process Review procedure is to ensure:

- (a) that management processes, activities and results meet required standards of business performance, management of risk, safety, environmental management, and legal compliance;
- (b) the efficiency and effectiveness of the procedures as controlled within the Integrated Business System of Mighty River Power Generation; and
- (c) opportunities for improvement are identified wherever possible.

3.33 An overall plan of key audit and review activities is developed and issued annually. These activities include both external compliance audits and inspections e.g. ACC Partnership Programme membership, ISO9001 Quality Management Systems certification, AS/NZS4801 Health & Safety Management Systems certification, Enviro-Mark NZ Diamond certification, Building Act compliance, HSNO (Hazardous Substances and New Organisms) compliance etc; and internal audits and management reviews associated with these processes.

Emergency Processes

3.34 Mighty River Power has extensive emergency processes in place to ensure that all emergencies can be effectively dealt with and managed. Key information is made available and accessible to all employees and contractors via the company's 'Incident

Management Plan'. The Incident Management Plan, and the associated site 'First Response Guide', details the formal incident and command structure to be implemented in a major emergency. Response protocols have been established for a number of identified emergency situations. In any emergency situation the designated Duty (site) Manager takes the leadership role, with an escalation process in place to the Duty (company) Executive if required.

- 3.35 Comprehensive training is provided to employees and contractors to manage on site emergencies. Training topics includes chemical and gas spills, chemical handling, fire fighting, dam safety, site evacuation, first aid and resuscitation.
- 3.36 All incidents must be dealt with in accordance with document EM10 – Environmental Incident Investigation, which is attached as **Annexure 4**. The procedure, as set out in that document, covers the investigation of incidents involving:
- (a) the spillage of all hazardous materials including, but not restricted to, liquid fuels and lubricants, or any other substance used or transported as part of a Mighty River Power operation;
 - (b) non-compliance with the Mighty River Power obligations to meet conditions of a resource consent or the provisions of a Regional or District Plan; and
 - (c) any other event likely to have a significant adverse effect on the environment within or beyond Mighty River Power's operational sites.

4. ENVIRONMENTAL AND PROJECT MANAGEMENT COMPLIANCE RECORD

- 4.1 Mighty River Power's generation portfolio includes the Waikato hydro system, which consists of nine power stations located along the Waikato River, three geothermal plants (Rotokawa, Mokai and Kawerau) which are located within the Taupo and Bay of Plenty regions, and the Southdown co-generation station located in South Auckland. The company also owns and operates methane gas recovery power stations from landfills at Rosedale and Greenmount in Auckland, and at Tirohia near Paeroa.
- 4.2 The continued operation and maintenance of Mighty River Power's generation sites is complex and is undertaken pursuant to multiple resource consents, issued by a number of

District and Regional Councils throughout the North Island. For the Waikato hydro system alone Mighty River Power holds 18 resource consents with 168 associated conditions.

- 4.3 Mighty River Power, particularly as a result of its operations on the Waikato River and at geothermal sites, is used to operating in environmentally sensitive areas. The Waikato River operations are located in a catchment that has high conservation, historic and natural values. All of the hydro stations on the river have one or more significant values associated with them. For example Aratiatia is associated with an outstanding rapids system and indigenous vegetation with significant natural character values. Arapuni, Whakamaru, Waipapa and Arapuni are all adjacent to DOC Conservation Areas. The Arapuni powerhouse, dam and swingbridge are classified as Category A Historic Sites and are listed in the South Waikato District Plan.
- 4.4 The Waikato hydro system also supports a wide range of recreational activities. Lake Taupo is an internationally recognised trout fishery and this lake along with those on the river provide for a wide range of water related activities. The World Rowing Championships were held on Lake Karapiro in 1978 and will be there again in 2010.
- 4.5 Mighty River Power is also very conscious of its position in the community as a long term contributor and as such prides itself on its relationship with key regulatory stakeholders, as well as community and conservation groups. In the Waikato Catchment Mighty River Power has no less than 20 separate agreements involving 24 different stakeholder groups.
- 4.6 Mighty River Power has retained on its staff a number of experienced environmental professionals from a range of environmental backgrounds. These staff are very well versed in New Zealand environmental management practises.
- 4.7 Mighty River Power has never had any environmental prosecutions, enforcement notices or abatement notices served on us for any of the generation sites, or for that matter anywhere across the company.
- 4.8 In 2006-2007, Environment Waikato assessed our consent compliance for the Waikato hydro system as “high level of compliance.” The 2007-2008 assessment is currently being confirmed but this too has assessed Mighty River Power as being at “high level of compliance.”

5. CONCLUSION

- 5.1 Mighty River Power has a robust and effective environmental management system to ensure compliance, comprising requirements at every management and operational level to ensure the best possible environmental outcomes. These processes and procedures will be modified to account for the development of the Turitea Wind Farm, and Mighty River Power will work with its wind experts to ensure that the best industry standard measures are adopted to include this new operation in Mighty River Power's existing generation environmental procedures.
- 5.2 As part of its environmental policy, Mighty River Power has an EMS in place that has been prepared in accordance with ISO standard 14001:2004. This EMS provides guidance to Mighty River Power staff as to the company's environmental objectives, processes for identifying and minimising potential areas of risk, means of implementation, processes for ensuring compliance with resource consents and regional and district plan rules, monitoring and corrective procedures, and emergency processes to be followed where an incident takes place.
- 5.3 Mighty River Power has a very experienced team of in-house environmental professionals and is very used to operating in sensitive catchments with high conservation and/or recreational values.
- 5.4 This focus on environmental compliance and management is highlighted by the fact that Mighty River Power has an exemplary Resource Management Act compliance record.

Gavin Williamson

1 May 2009

ANNEXURE ONE



Environmental Policy

Our vision is to be recognised as a well-managed, environmentally responsible electricity generator, wholesaler and retailer. In creating sustainable value from our relationships and resources, we are committed to caring for the environment in which we work and live, and to sustaining its quality for future generations.

To achieve this, we will:

- Continue to prioritise protection of the environment in accordance with our commitment to sustainable development.
- Continually improve our environmental performance and use of resources.
- Reduce, reuse and recycle materials to minimise waste.
- Minimise environmental effects, including emissions and impacts from our operations through effective monitoring, and continual improvement of performance.
- Continually work towards understanding what is important to our communities and addressing their concerns about our operations.
- Build long-term partnerships with communities, our business partners and other stakeholders to create sustainable environmental improvements.

To support this Policy, Mighty River Power commits to:

- Our leaders being accountable for action plans to deliver environmental improvements, and allocation of resources to achieve these plans.
- Comply with environmental legislation.
- Implement and maintain environmental management systems, including measurable objectives and targets.
- Promote employee, contractor and community awareness of environmental issues through on-going training, communication programmes and external reporting of our environmental performance.
- Regularly review this Policy.

A handwritten signature in blue ink, appearing to read 'Doug Heffernan', with a long horizontal stroke extending to the right.

Doug Heffernan
Chief Executive
17 August 2006

ANNEXURE TWO

• Process Title

QM40 RESPONSIBILITY, AUTHORITY AND COMMUNICATION

• 1. Purpose & Scope

The *Responsibility, Authority and Communication* procedure is to ensure Mighty River Power, Generation, (MRP Generation) identifies appropriate management responsibilities and authorities in implementing and maintaining the MRP Generation Business Systems including regulatory requirements. Methods of and parties to internal and external communications are outlined in this document.

This procedure applies to all asset segments within MRP, Generation, including all generating sites and the generation offices at Hamilton and Whakamaru.

• 2. Management Responsibilities

- 2.1 The CEO is responsible for signing the Environmental Policy. It is the responsibility of Hydro, Thermal and Geothermal Management to ensure this policy is communicated and implemented by all staff and displayed appropriately.
- 2.2 Hydro, Thermal and Geothermal Management are responsible for developing, communicating and implementing the Quality Policy and Health and Safety Policy.
- 2.3 Hydro, Thermal and Geothermal Management define the responsibilities, authorities and interrelations of all personnel who manage, perform and verify work within Generation, including the Integrated Business System.
- 2.4 Hydro, Thermal and Geothermal Management identify in-house verification requirements, provide adequate resources and assign trained personnel for establishing, reviewing and maintaining the processes and for verification activities.
- 2.5 Hydro, Thermal and Geothermal Management are responsible for ensuring that a mechanism for monitoring work processes and outputs, so that objectives are consistently met, is in place.
- 2.6 Hydro, Thermal and Geothermal Management are responsible for regular review, of the systems and development within the Integrated Business System, including: Quality, Health and Safety, and Environmental Management Systems.
- 2.7 Process Owners provide appropriate process documentation that describe the systems and procedures operating within MRP Generation.
- 2.8 All roles and responsibilities are outlined in position descriptions, which are located within the Universal File Structure, and are managed by the appropriate managers.

All positions are identified and depicted through an organisation chart, which shows the structure of the organisation.

- 2.9 In co-operation with the relevant station and/or plant operators, Operations and Plant Managers are responsible to establish, implement, document, maintain and communicate appropriate systems, procedures and work instructions.
- 2.10 Any investigation of incidents or accidents that may occur is the responsibility of the site manager.
- 2.11 The Health, Safety and Environmental Committee is responsible for reviewing the reports, recommendations and actions from any incidents.

• **3. Individual Responsibility and Authority**

Hydro, Thermal and Geothermal Management support the organisational freedom and authority to:

- Identify and record any operational, strategic or administrative opportunities to improve.
- Initiate, recommend or provide solutions through the appropriate channels.
- Communicate the implementation of solutions through appropriate channels.
- Request removal of plant from service in the event of a significant safety, environmental or compliance issue.

Position Descriptions are used to indicate the responsibilities and the skills required of employees. Copies of appropriate Position Descriptions are held by each employee and the relevant Manager, and can be found within the Universal File Structure at <\\mrp\data\Processes\Generation IBS> [Position Descriptions HydroThermal](#) and [Position Descriptions Geothermal](#).

Any MRP employee can report a non-conforming process and initiate a review of a work practice through the appropriate continuous improvement process.

Any employee can initiate solutions to a quality-related problem by following the [Continuous Improvement](#) procedure.

• **4. Internal Communications**

4.1 **Mighty River Power Performance and KPI Communications**

MRP produces a monthly staff KPI communication report on the highs and lows of the previous months trading and operational performance versus KPI's. This forum of information sharing is hierarchical based starting with GM briefing Direct Reports, who in turn brief business unit managers and then line managers briefing their staff.

4.2 **Fortnightly Generation Management meetings**

Hydro, Thermal and Geothermal Management meet regularly to discuss relevant operational issues and update teams on progress of specific tasks and projects. A standard agenda is followed which ensures that key aspects are addressed, while allowing flexibility for additional items to be discussed.

4.3 **Regular broadcast e-mails**

MRP uses its internal e-mail system to broadcast news events, meeting times and venues, staff information, etc. The system is company wide with the ability to broadcast to everyone or to select groups or individuals.

4.4 **Team Meetings/Briefings**

MRP Generation comprises a number of Business Units, which have regular Business Unit briefings. The business unit managers are responsible for relaying notices and information briefed to them by the Direct Reports.

From time to time an internal staff questionnaire to evaluate staff's perception of particular topics will be circulated. These questionnaires are analysed and trends reported back to the staff.

4.5 **Mighty River Power EnerNet**

MRP has within its computer system, an intranet known as EnerNet. The EnerNet runs 24/7 and provides quick and efficient network connections, important information, and is continually under development. The EnerNet currently provides information on Generation, Customer Services, Sales & Marketing, Human Resources, Information Services, Finance & Revenue, Business Processes, and houses the internal phone directory.

[The Generator](#) is a web-based knowledge-management directory and a cohesive way to capture company knowledge online and make it available to users of EnerNet. It is the primary communication vehicle for all controlled policies and process documents for MRP Generation.

4.6 **Mighty River Power Quarterly Newsletter**

Mighty River Power, Corporate, produces a quarterly newsletter including an editorial from the CEO. The newsletter reports on important events that have happened within the past quarter, projected and local events sponsored by Mighty River Power. This newsletter is forwarded to relevant external stakeholders.

4.7 **Notice Boards**

These are situated throughout the various sites and offices of MRP, and display current Policies, relevant emergency information and other important information for staff.

• **5. External Communications**

5.1 **Mighty River Power Web Site**

The [Mighty River Power](http://www.mightyriver.co.nz) Web Site (www.mightyriver.co.nz) contains a comprehensive guide to the company, the role it plays and its relationship with local communities and the people of New Zealand. It contains interesting facts regarding the MRP Generation, Retail and Metering Networks, and is an ideal place for new employees

and any stakeholders to acquire an overview of MRP, its subsidiaries and the electricity industry as a whole.

5.2 Media Communications

Mighty River Power has a [Media Policy](#) which gives guidelines on which staff members are qualified to talk to the media. This Policy should be followed in any circumstances where media are involved.

5.3 Complaints

Any complaints that are received from external parties are forwarded to the appropriate member of staff to be resolved in a timely and correct manner.

5.4 Stakeholders

The company has many stakeholders with whom it is necessary that we communicate at varying intervals and through a variety of different methods. These stakeholders include, but are not limited to, Councils, Iwi, community and sporting groups, landowners, and contractors. Formal and informal meetings, letters and newsletters are just some of the forms of communication with these important people and organisations.

• **6. Related Documents**

- [QM10 Documentation Management](#)
- [QM50 Continuous Improvement](#)
- [QM52 Internal Audits / Process Reviews](#)
- [QM60 Regulatory Requirements](#)
- [Media Policy](#)

ANNEXURE THREE

• Process Title

QM52 AUDITS AND PROCESS REVIEWS

• 1. Purpose & Scope

The *Audits & Process Review* procedure is to ensure:

- 1.1 That management processes, activities and results meet required standards of business performance, management of risk, safety, environmental management, and legal compliance.
- 1.2 The efficiency and effectiveness of the procedures as controlled within the Integrated Business System of Mighty River Power Generation.
- 1.3 The identification of opportunities for improvement.
Audits (both internal and external), and process reviews also identify opportunities to improve business processes for increased effectiveness. This process applies to all audits and formalised review processes undertaken within MRP Generation.

This procedure includes, but is not limited to, the Integrated Business System and associated information and documentation as found on [The Generator](#) along with other compliance related processes.

• 2. Roles & Responsibilities

- 2.1 Hydro, Thermal and Geothermal Management, through the applicable process owners, have the overall responsibility and authority to ensure appropriate Audits and Process Reviews are established and carried out.
- 2.2 The Quality Management Representative is responsible for preparing, issuing and managing the annual audits/review schedule.
- 2.3 Process owners and site managers are responsible for ensuring that all corrective, preventive and continuous improvement actions as a result of the audits and reviews are implemented. Process owners are also responsible for:
 - 2.3.1 Facilitating the selection and appropriate training of auditors and reviewers in the various system disciplines.
 - 2.3.2 Ensuring appropriate reporting to management on audit and/or review results.
- 2.4 The Business Systems Advisor is responsible for the day-to-day management of the Audit/Process Review system.
- 2.5 The manager assigned to each identified process area is responsible for implementing actions resulting from Audits and Process Reviews relating to their area of responsibility, and reporting outcomes to Hydro, Thermal and/or Geothermal Management and the Business Systems Advisor.

- 2.6 All employees are responsible for the Integrated Business System, as defined by their individual position description and appropriate process documents.

• **3. Audit & Review Principles**

The following principles will be applied to all audits & reviews conducted for MRP Generation:

- Audits & Reviews will focus on areas of significant risk or opportunity to the business;
- Auditors and Reviewers will be independent of the area being reviewed unless the activity is identified as a routine self-audit;
- Auditors and Reviewers will be selected from persons assessed as competent to undertake the scope of the audit;
- Representatives of the team being audited should be directly involved wherever practicable;
- Audits & Reviews will focus on the effectiveness of the process being audited, and compliance with key requirements;
- Any critical deficiencies (e.g. personnel safety, hydraulic structure safety, or legal non-compliance) shall be addressed with the appropriate team or manager immediately;
- Initial review findings will be discussed with a representative of the team being reviewed prior to the review report and recommendations being finalised. This may be done as a 'close-out' meeting, or if this is impracticable, in the form of a draft report for comment;
- All improvement recommendations should be tracked by the IBS Team. The team accountable for the process shall have assigned responsibility and a defined time-frame for completion.

• **Procedure**

4. AUDITS & PROCESS REVIEW SCHEDULE

4.1 An overall plan of key Audit and Review activities is developed and issued at least annually. Accountability for establishing timing of audits for each of the auditable activities rests with the manager accountable for that process. The Business Systems Advisor will collate and publish these as an overall [Audit Plan](#) to allow Hydro, Thermal and Geothermal Management to monitor progress and follow up results.

4.2 [Audits and Process Reviews Process Map](#)

5. PROCESSES AND ACTIVITIES AUDITED OR REVIEWED

The following MRP Generation activities are subject to periodic internal audit:

5.1 Hydraulic Structures (Dam Safety Assurance Programme)

- Audited to ensure compliance with
 - Dam Safety Policy

5.1.1 Audit Process and Auditors

The Dam Safety Assurance Programme (DSAP) ensures ongoing safety of Mighty River Power's Hydraulic Structures (dams, canals, spillways and diversions). Key review activities in the DSAP are Comprehensive Safety Reviews (CSRs) and Annual Civil Inspections.

CSR's are undertaken by selected external experts on a six yearly cycle administered by the Civil Engineer. Annual Civil Inspections are conducted for each hydraulic structure by the Civil Engineer.

5.1.2 Reports, Records and Review

CSRs are documented as formal reports by the CSR team. These reports are reviewed by the Civil Engineer and Plant Manager and entered in the MRP Library once all actions and recommendations are logged.

Annual Civil Inspections are reported on by the Civil Engineer undertaking the inspection, and entered into the MRP Technical Library.

5.1.3 Corrective Action

Corrective actions may include remedying identified deficiencies or investigating uncertain conditions to determine whether a deficiency exists.

Any required actions from CSR reports and Annual Civil Inspections are tracked by the Civil Engineer and the relevant Station Superintendent, through a shared workbook within the Universal Folders.

5.2 Pressure Equipment

- Audited to ensure compliance with:
 - Pressure Equipment (Excluding Boilers) Code of Practice
 - AS/NZS 3788 Pressure Equipment – In service inspection
 - [GR006 Pressure Equipment](#)
 - Where appropriate, MRP's Risk Based Inspection (RBI) Programme

5.2.1 Audit Process and Auditors

Review of the Pressure Equipment Process and Documentation will be undertaken every six years.

Accountability for annual compliance audits with MRP's internal documentation rests with the Controller (Plant Manager or Station Superintendent).

Audits and Reviews are monitored on the annual Audit and Review Plan.

5.2.2 Reports, Records and Review

Audits will be documented as an audit report with any relevant corrective actions and improvement recommendations. Discussions and reviews of these audit reports are held between the auditor, the Controller and any other appropriate staff member.

5.2.3 Corrective Action

Following an audit, any corrective actions are carried out within a specified period, and evidence of the action is reported to the auditor. Once acceptance of these actions is given, the audit is deemed complete.

5.3 Work Control Processes

- Audited to ensure compliance with:
 - GPG Documents (includes Operating Audits covering operating standards, safety isolations, permits and ongoing competency)

Audits will include:

- Planned Inspections
- Site audits (six-monthly)
- Site hazard reviews (monthly)

5.3.1 Audit Process and Auditors

Planned Inspections (annually), site audits (six monthly) and monthly hazard reviews are self-audited by the appropriate staff at each site.

5.3.2 Reports, Records and Review

Audits will be documented with recommendations for improvements submitted to the manager of the sites being audited.

5.3.3 Corrective Action

Improvement recommendations are tracked.

5.4 Health, Safety and Environmental (IBS Audits)

- Audited to ensure Compliance with:
 - ACC Partnership Programme
 - AS/NZS 4801 Occupational Health and Safety Management System
 - Enviro-Mark
 - ISO 9001:2000
 - Building Compliance

5.4.1 Audit Process and Auditors

Health, Safety and Environmental audits cover both critical safety processes, and hazard management.

Work control processes and associated documentation are systematically audited by a competent person at least annually. This covers operating standards, safety isolations, permits, and ongoing competency requirements. The environmental audits are the systematic examination of the interactions between an operation and its surroundings, involving the identification of environmental impacts and quantification of impacts.

Selected areas of Mighty River Power are externally audited on an annual basis as part of our membership of the ACC Partnership Programme. A selection of sites is audited annually as part of our Enviro-Mark certification.

Building Compliance reviews will be conducted at least monthly by the person responsible for each site.

5.4.2 Reports, Records and Review

All Health, Safety and Environmental audits are documented as an audit report with improvement recommendations. Audit reports are reviewed by the manager of the plant being audited, the Quality Management Representative and the Business Systems Advisor.

5.4.3 Corrective Action

Improvement recommendations are tracked through action recommendations from the Audit reports.

5.5 Risk Controls and Legal Compliance

- Audited to ensure compliance with:

- MRP Risk Policy and Regulatory Requirements (under development)

Audits include:

- Annual programme of Risk reviews as issued by the Risk Management Committee
- Class 5/6 risk controls (annually)
- Class 4 risk controls (as required by Risk Management Committee)

5.5.1 Audit Process and Auditors

Risk controls may be periodically audited as required by the Risk Management Committee. Priority will be given to risks which have a risk of Class 5 or above. Accountability for planning of risk control audits rests with the Planning & Risk Strategist.

5.5.2 Reports, Records and Review

Audits will be documented with recommendations for improvements submitted to the manager of the sites being audited, the Assets team, and the Risk Management Committee.

5.5.3 Corrective Action

Process improvement recommendations will be tracked. Alterations to physical risk controls will be tracked through use of Maximo work-orders.

5.6 Projects and Contract Management

- Audited to ensure compliance with:
 - [GR012 Tender and Contract Award Guidelines](#)
 - [GR013 Contractor management Guidelines](#)
 - [GR014 Project management Guidelines](#)

5.6.1 Audit Process and Auditors

Accountability for planning of these audits rests with the Manager of Contracts and Projects. Audits are conducted against the above documents:

Both current and closed contract documentation are systematically audited by a competent person, at least annually. Auditors will be selected from within MRP Generation, or external advisors, based on their knowledge of the areas being audited. The audit covers items considered as being high risk to the organisation.

5.6.2 Reports, Records and Review

Audits will be documented as an audit report with improvement recommendations. Audit reports are reviewed by the manager of the contract being audited, and the Manager of Projects and Contracts.

5.6.3 Corrective Action

Directly following the audits, refresher training will be carried out for areas where common non-conformances are identified. Improvement recommendations will be tracked.

6. MANAGEMENT REVIEW

- 6.1 Hydro, Thermal and Geothermal Management review the appropriate safety, environmental, risk, compliance and/or quality deficiencies at each scheduled meeting, as determined on a risk basis. Frequency of audits is determined by the manager accountable, based on risk.
- 6.2 Audit results are reviewed by the manager accountable for the area and/or site being audited and the Quality Management Representative, as appropriate.
- 6.3 On an annual basis Hydro, Thermal and Geothermal Management will review the suitability and effectiveness of the Integrated Business System. This review is scheduled on a quarterly basis.

7. Related Documents

- [QM10 Documentation Management](#)
- [QM40 Responsibility, Authority, and Communication](#)
- [QM50 Continuous Improvement](#)

- [Current Audit & Review Schedule](#)
- [Audit Report Format](#)

ANNEXURE FOUR

• Process

EM10 ENVIRONMENTAL INCIDENT INVESTIGATION

• 1. Purpose & Scope

To describe the procedure for investigating environmental incidents associated with Mighty River Power operations.

This procedure covers the investigation of incidents involving:

- the spillage of **all** hazardous materials including, but not restricted to, liquid fuels and lubricants, or any other substance used or transported as part of a Mighty River Power operation;
- non-compliance with the Mighty River Power obligations to meet conditions of a resource consent or the provisions of a Regional or District Plan;
- any other event likely to have a significant adverse effect on the environment within or beyond Mighty River Power's operational sites.

Note: This procedure covers the investigation of environmental incidents regardless of where they occur.

• 2. Roles & Responsibilities

Generation Resources is responsible for:

- investigating the causes of an incident or convening an investigation team to investigate the cause of an incident to determine how best to avoid a recurrence of the incident;
- reporting all details of the incident, remedial actions taken, and recommendations to avoid a repetition of the incident to the Manager - Generation Resources, and the appropriate Operations Managers.

Operations Managers are responsible for:

- providing resources to investigate incidents when required;
- reviewing the findings and recommendations of all investigations undertaken;
- taking appropriate action following a review of any investigation of an incident.

• 3. Procedure

The Process of an Investigation

The process of investigating an incident rarely alters from one investigation to another.

The Investigating Officer/Team are to follow these terms of reference when investigating incidents. The use of the TRIPOD model and the establishment of the Causation Incident Tree is an essential part of the investigation process to be used in Mighty River Power investigations. That is:

- Establish what the outcome of the incident was.
- View the site.
- Identify and list the Essential Factors.
- Identify Contributing Factors to the Essential Factors.
- Interview all witnesses and gather any other evidence (photographs, sketches, etc).
- Establish the real cause of the incident.
- Identify recommendations for preventative action.
- Provide a report of the facts surrounding the incident.
- Attach to the report all the data gathered i.e. relevant statements, photographs and items to substantiate opinions or findings.
- Hand the entire report to the person who required the investigation, on time.

Essential Factors

Essential Factors are those activities or conditions that are essential to the occurrence of the incident. The best examples of essential factors are those required to produce fire, ie. heat, fuel and air (oxygen). Without any one of these ingredients you are unable to have a fire. Ask the question, what was present which caused this incident.

Contributing Factors

For each Essential Factor there will be a series of Contributing Factors. Ask "Why" a number of times to identify all of the possible activities or conditions that may have led to the Essential Factor being present.

Standards/Codes of Practice

For each of the Contributing Factors it needs to be established whether there is a Standard which covers this activity or condition and whether it has been complied with.

Protection of Evidence

All statements, photographs and other items that support investigations are to be treated as confidential.

Interviewing Witnesses

Interviewing requires skill and organisation. Witnesses must be put at ease and reassured that the intent of the interview is not to blame those involved but to uncover the causes so that future recurrence of the incident can be prevented. Care must be taken to avoid intimidation.

Individual interviews are necessary to reduce the effect of peer group influence.

They should be carried out as soon as conveniently possible, before opinion begins to mask the facts.

Questioning techniques should include open-ended questions but must avoid influencing the witness by comments or loaded questions. This does not, however, preclude clarification of specific points.

At the end of the interview, summarise, clarify and above all thank the witness for their co-operation.

Developing the Causation Tree

Identifying Essential and Contributing Factors must be approached objectively. This process establishes the Incident Causation Tree. The major result of this process is to establish the root causes of the incident.

Where people are involved, is it certain that an act or omission was a factor contributing towards the incident? It should be recognised that there may have been a shortcoming or failure in the organisation or systems that had a major influence. These are known as Latent Failures. They will ultimately require a Preventative Action to prevent a recurrence, and need to be in the Investigation Report.

The TRIPOD Model

The causes of incidents are divided into two areas:

- Active Failures
- Latent Failures

Go beyond the Active Failures, if required, to find the real cause of an incident.

Presentation of Findings

The findings of the investigation are presented as part of the report and any recommendations or preventative action should also be within the report.

Flow Chart

Investigation Process, as shown in Appendix 1.

Subsequent Actions

Set out a statement of preventative action taken/proposed subsequent to incident. Where action has already been taken, state the dates of completion. Give a description of the steps taken/proposed. Include costs of any corrective action and an assessment of whether steps are/were necessary to address the effects of the incident having regard to factors such as:

- Cost;
- Logistical difficulty;
- Available technological steps;
- Practicality in the circumstances;
- Degree of or extent of effect on the environment that may be suffered if hazard is not eliminated;

Statement of subsequent alteration to guidelines, training, etc, details of any training programme subsequently instituted, even on a site-wide basis.

Statement of any subsequent action taken in relation to the site.

Review the overall Mighty River Power policy in relation to the environmental issues arising from the incident and any other relevant information which personnel involved believe would assist.

Contractors Incident Reporting and Investigation

Separate Investigations

Contractors shall investigate environmental incidents involving their workforce as part of their environmental system. Their investigation is quite separate from any undertaken by Mighty River Power, which relate to responsibilities as the Principal under the Act.

A contractor may be invited, as an observer or participant, to be part of the Mighty River Power Incident Investigation Team.

Definitions

Environment includes:

- (a) Ecosystems and their constituent part, including people and communities; and
- (b) All natural and physical resources; and
- (c) Amenity values; and
- (d) The social, economic, aesthetic and cultural conditions.

Environmental Incident or Incident

Any event that is likely to or could breach or has breached a regulatory performance standard or Mighty River Power performance standard and/or could have or has had a significant adverse effect on the environment.

Hazardous Substance

Any substance declared as such under the Hazardous Substances and New Organisms Act 1996.

Immediately

For the purpose of this procedure, means: occurring without undue delay, occurring as soon as it can be done.

Spillage

The discharge, failure to contain, or the inappropriate use of a material that may give rise to or has given rise to an environmental threat or incident.

	Record	Location	Responsibility	Retention	Disposal
(a)	Incident Report	E03-07 (Incidents and Complaints)	Resources Operations	Archive	

(b) Resource Consents T24 (Resource Consents) Resources Operations Archive

• **4. Related Documents**

[Mighty River Power Environmental Objectives](#)

[News Media Policy](#)

APPENDIX 1

