NORTHWEST TERRITORIES POWER CORPORATION

Empowering Communities

Taltson Hydro

Emergency Preparedness Plan

2022

DOCUMENT HISTORY				
Revision #	**Revised Sections**	**Description of Revisions**	**Prepared By**	**Issue Date**
-	All	Initial Version		2012
1	1, 3, 4, 6, 8	Updated contact information, position titles, flood response measures, available equipment list and borrow locations, added all Taltson dam information and updated hazard classifications. Added EPP training record to Section 8.	Jamie Tennant	January 2022

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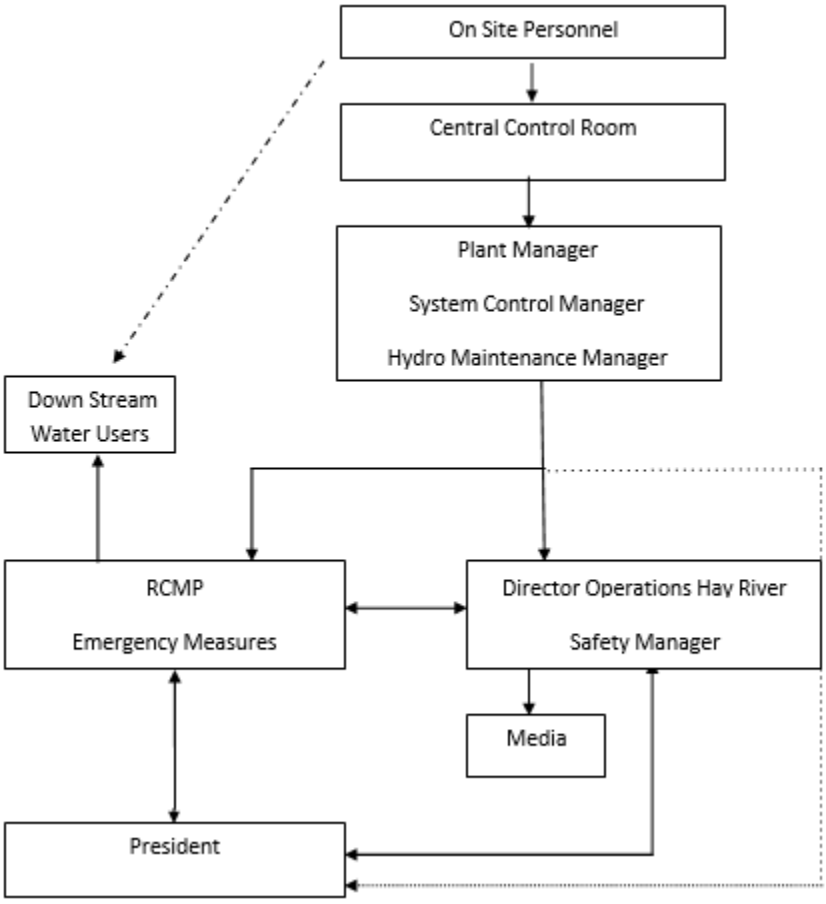
1.0 Emergency Notification

1.1 Emergency Notification Flowchart Organizational Communication Plan



1.2 Emergency Notification Information

Calls that must be made:

1. **On Site Personnel / Control Center Operator shall report to:**

NTPC System Control	867-669-3370 (O)
Manager, Plant Operations – Vacant	867-872-xxxx (O)
	867-872-xxxx (cell)
Director, Hydro Operations – Alex Love	867-669-3326 (O)
	867-445-6525 (cell)

2. Regional Director shall report to the following:

President & CEO – Cory Strang	867-874-5217 (O) 867-875-7676 (cell)
Director, HSE – Vacant	867-874-xxxx (O) 867-875-xxxx (cell)
Manager, Hydro Program – Brad Harrison	867-874-5235 (O) 867-875-8914 (cell)

3. Local Agencies (Fort Smith):

Fire Department/Ambulance	867-872-2222
Hospital	867-872-2222
RCMP	867-872-1111
Town Hall	867-872-8400
Public Works	867-872-2173
Public Works (After Hours Emergency)	867-872-5526

4. Other important phone numbers:

GNWT Emergency Measures Organization	867-873-7554 867-872-1025 (cell)

2.0 Statement of Purpose

2.1 Purpose

This Emergency Preparedness Plan (EPP) has been prepared to assist NTPC personnel, the Territorial Emergency Coordinating Committee, the RCMP, and other responsible local and regional officials in responding swiftly and effectively to emergencies at the Taltson Hydro facility. It facilitates efficient mobilization of NTPC manpower and equipment to deal with any developing emergency condition. It allows the non-NTPC emergency officials to establish timely warning procedures for the protection and security of property downstream.

Inclusion in the EPP of procedures dealing with the safety of the dam itself does not in any way reflect upon the integrity of the dam.

2.2 Scope

The EPP sets out initial instructions for the Taltson Hydro Operations staff to follow during emergencies at the dam. It describes:

1. Initial actions and observations to be taken.
2. Organizations and persons to be notified.
3. Remedial or deviating actions to be initiated; and
4. Resources available.

The procedures are designed to prevent or minimize loss of life and/or damage of property resulting from an emergency at a dam. In case of an emergency affecting the safety of the dam, procedures for initiating warning of downstream users are specified, consisting essentially of notification of local emergency agencies. Detailed public warning procedures are the responsibility of the RCMP and local and territorial emergency programs, agencies, and authorities.

Emergencies not specifically identified in the EPP shall be handled by the Plant Operations Manager and their staff using procedures appropriate to the degree of threat to life and property posed by the emergency, based on the procedures outlined in the Plan for emergencies of similar severity.

3.0 Project Description

3.1 Location of Dams and Downstream Areas

The location of the Taltson Hydro Facility is shown in Figure 1. Water flows from Nonacho Lake over the Nonacho dam into the Taltson River, over the Twin Gorges dam, and continues down the Taltson to Great Slave Lake.

A) Twin Gorges Dam

Hazard Classification: Significant
Location and Access: 58 km northeast of Fort Smith, NT
Latitude: 60°25’12’’N **Longitude:** 111° 23’30’’ W
River/Stream: Taltson River **Nearest City/Town:** Fort Smith, NT
Dam Type: rockfill with till core
Spillway: overflow concrete sill **Spillway Capacity:** 1700 m^3
Outlet other than spillway: Powerhouse Unit # 1
Purpose/Operation of Dam: Hydroelectric
Significant upstream dams: Nonacho
Significant downstream dams: None
Overview of Inundation Area: Has not been prepared to date

B) Nonacho

Hazard Classification: Significant
Location and Access: 215 km northeast of Fort Smith, NT
Latitude: 61°39’42’’N **Longitude:** 109°57’44’’W
River/Stream: Taltson River **Nearest City/Town:** Lutselk’e, NT
Dam Type: rock-fill (leaky dam)
Spillway: overflow rock sill
Outlet other than spillway: 3 control gates
Purpose/Operation of Dam: Regulate water to Twin Gorges dam
Significant upstream dams: None
Significant downstream dams: Twin Gorges
Overview of Inundation Area: Has not been prepared to date

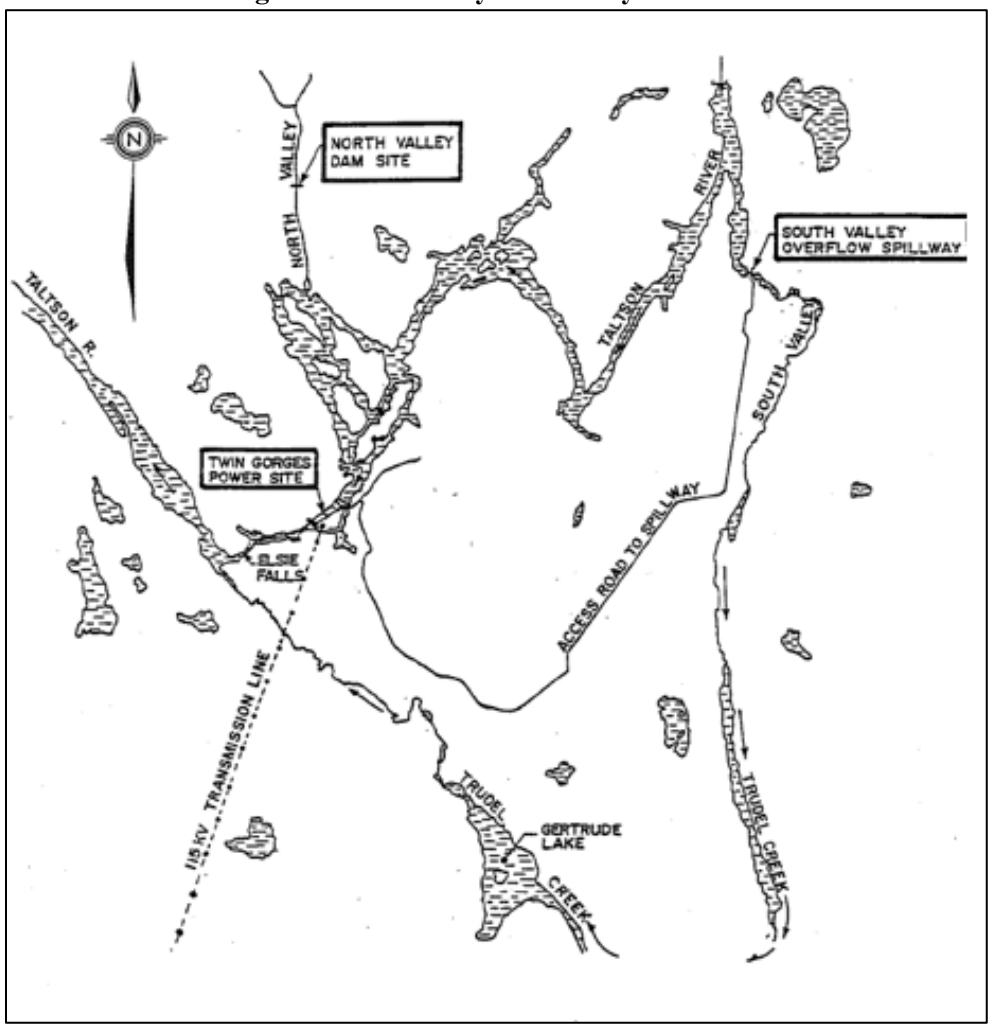
C) South Valley Spillway

Hazard Classification: Significant
Location and Access: 60 km northeast of Fort Smith, NT
Latitude: 60°26’40’’N **Longitude:** 111°17’17’’ W
River/Stream: Taltson River **Nearest City/Town:** Fort Smith, NT
Dam Type: Concrete overflow ogee weir
Outlet other than spillway: 1 concrete gate near right abutment
Purpose/Operation of Dam: Spillway for Taltson reservoir
Significant upstream dams: Nonacho
Significant downstream dams: None
Overview of Inundation Area: Has not been prepared to date

D) North Valley Dam

Hazard Classification: Low
Location and Access: 58 km northeast of Fort Smith, NT
Latitude: 60°27’18’’N **Longitude:** 111°23’45’’ W
River/Stream: Taltson River **Nearest City/Town:** Fort Smith, NT
Dam Type: rockfill
Purpose/Operation of Dam: Impound reservoir
Significant upstream dams: Nonacho
Significant downstream dams: Twin Gorges
Overview of Inundation Area: Has not been prepared to date

Figure 1: Taltson Hydro Facility Locations



4.0 Emergency Detection, Evaluation and Classification

4.1 Potential Dam Breach

4.1.1 Definitions

There are two classifications of Potential Dam Breach:

i. Dam Advisory Condition

A Dam Advisory Condition is a situation where an unusual problem or situation has occurred, but a failure of the dam is not imminent. Examples of a Dam Advisory Condition are:

- Instrumentation readings reach pre-determined numerical limits.
- Any undocumented or unusual spring.
- Any sign of piping.
- Any sign of slumping.
- Any sinkhole.
- Any unusual crack.
- Any unusual wet spot or boggy area.
- Any seismic event regardless of how slight.
- Any obstruction in the spillway.
- Evidence of damage due to vandalism at any structure(s).
- Bomb threat.
- A civil disorder near the reservoir structure(s); and
- Any aircraft accident near the reservoir structure.

ii. Dam Warning Condition

A Dam Warning Condition is any developing or occurring event or circumstance which is or may adversely affect the integrity of the dam but is considered controllable. The Dam Warning Condition has the potential of evolving into a Dam Emergency or Dam Breach condition. Examples of a Dam Warning Condition are:

- Water level of the reservoir is at an unsafe level and is rising threatening to overtop the dam; and
- Any developing erosion, settlement or upheaval occurring on the downstream slope or at the toe of the dam that is considered controllable.

4.1.2 Hazard

A potential dam breach may require the controlled release of unusually large flows causing downstream flooding and/or requiring action at downstream dams and reservoirs.

4.1.3 Response

Any observer who learns or suspects for good reason that potential breach condition exists in the dam shall immediately report the situation to the Plant Operations Manager who shall:

1. Ascertain and verify details of failure threat:

    - Description of sloughs, subsidence, movement, cracking, seepage, drainage disturbances, etc.
    - Location and extent
    - Likelihood of deterioration
    - Effects on adjoining structures
    - Reservoir and tail water elevations (if available)
    - Prevailing weather conditions
    - Other facts believed to be pertinent

2. Initiate notifications procedures:

    - Make certain all officials understand the nature of a potential breach condition and the possibility of eventual dam breach.

3. Evaluate threat:

    - Determine and implement the immediate actions which must be taken to reduce or eliminate risk of a breach.
    - Take action to minimize potential for downstream flooding; and
    - If the situation deteriorates markedly and a breach occurs or becomes imminent, implement "Dam Breach" procedures set out in Section 4.2.

4.1.4 Notifications

Immediate notifications shall be made as shown in Section 1-1. The MPO plays a larger role in initial notifications in the case of potential breach compared with an actual breach because he/she is the key coordinator in the evaluation of breach potential, possible remedial measures, impact reduction, etc.

If any individual or agency responsible for making further notifications cannot be reached, it shall be the responsibility of the initiating caller to make the next stage of notifications themselves.

The MPO may specify additional people or agencies that should be notified and initiate actions which may reduce the downstream flooding hazard. The System Control Centre in Yellowknife shall be kept fully informed of any change affecting reported condition of the emergency.

4.1.5 Media Contacts

Formal media contacts with NTPC related specifically to a potential dam breach shall be handled in conjunction with NTPC’s Manager, Communications.

4.2 Dam Breach

4.2.1 Definition

There are two kinds of Dam Breach situations:

i. Dam Emergency Condition

A Dam Emergency Condition is defined as one or more of the following situations:

- Water has overtopped or will overtop any dam or dyke.
- Any uncontrollable erosion, settlement, or upheaval occurring on the downstream slope or at the toe of the dam.
- Any uncontrollable leakage through any dam structure.

ii. Dam Breach Condition

A Dam Breach Condition is defined as:

- A dislocation or failure of any structure which allows for an expanding, uncontrollable discharge of water through the spillway, dam, or dykes indicating a breach is occurring.

4.2.2 Downstream Hazard

Any building, road, bridge, powerhouse, dam, or settlement which could possibly be reached by flooding.

4.2.3 Response Checklist

1. Observe and report breach (see below).
2. Verify breach report.
3. Notify people shown in Section 1.1 to start warnings; and
4. Take action to stem or alleviate flooding downstream.

4.2.4 Observations

Any observer who learns or suspects for good reason that a breach has formed in one of the dams shall immediately report the situation to the MPO. If the MPO is not available, the observer shall contact the Manager on Call. In clear concise language the observer shall relate:

1. Name and position.
2. Identification of the breached dam.
3. Location of breach.
4. Magnitude (size of cracks, gaps, erosion rate).
5. Rate of enlargement.
6. Rate of uncontrolled flow.
7. Rate of increase in flow; and
8. Time of commencement of breach.

The observer must estimate the above to the best of his ability as measures taken by others will depend on the information supplied.

4.2.5 Verification

Before notifying others, the MPO shall be satisfied that the failure report is genuine. Verification may include:

1. Recognition of caller.
2. Caller's demonstrated knowledge of NTPC procedures, personnel, systems, etc.
3. Corroborative evidence from instrumentation, current environmental conditions (e.g., weather, earthquake); and/or
4. Contacting another member of staff at or near the dam site for confirmation (but only if there is serious doubt about the veracity of the report. Remember, time may be of the essence).

4.2.6 Notification

1. Immediate notifications shall be made as shown on the chart in Section 1.1. The notifications are arranged to maximize the time available to allow site personnel to devote their time to remedial operations and actions to lessen flooding.
2. If any individual or agency responsible for making further notifications cannot be reached, it shall be the responsibility of the initiating caller to make the next stage of notifications himself.
3. The System Control Centre in Yellowknife shall be kept fully informed of any change affecting the reported condition of the emergency.
4. Staff residing at the Taltson staff house may be aware of temporary hunting or fishing camps in the area. If an evacuation is planned and the camps are accessible by vehicle or boat, notification will be made. If camps are not easily accessible, the RCMP will be notified.

4.2.7 Media Contacts

In general, emergency announcements through the local media will be the responsibility of RCMP and/or local officials. The MPO may contact the local communications media as necessary to assist with any emergency announcements or to obtain information.

However, formal contact by NTPC staff with the media should be handled in conjunction with the Communications Manager. Prior consultation between Territorial and NTPC Communications Manager is encouraged in dealing with media inquiries.

4.3 Earthquakes

An earthquake alert exists if an earthquake is felt in the Taltson area. In the case of an earthquake alert the MPO shall immediately arrange for a general overall inspection of the dam and surrounding slopes.

The MPO shall proceed as follows:

1. **Severe Damage** - If a dam is damaged to the extent that there is a rapidly increasing or large uncontrolled flow passing downstream, implement "dam breach" procedure set out in Section 4.2.

2. **Significant Damage** - If damage has occurred which has not caused a breach, but which poses an immediate threat to the safety of the dam (e.g., significant increases in drain flow, new seepage, boils, cracking or slumping of dam embankment or major cracks in concrete control structure), implement "Potential Dam Breach" set out in Section 4.1.

3. **Minor Damage** - If damage has occurred which does not present an immediate threat to the safety of the dam (e.g., small cracks or displacements, small increases in drain flow, small rockslides, or earth slides), the following shall be implemented by the MPO:

    - Conduct a thorough inspection of both faces of dams and crests for cracking, slumping, offset, or seepage.
    - Conduct a detailed inspection of areas in vicinity of abutments for possible landslides, displacements, or seepage.
    - Inspect all drainage systems and note any changes in established drainage patterns and whether drainage flow is clear or cloudy.
    - Inspect powerhouse, power intakes, and spillways to determine any damage.
    - Observe reservoir slopes and downstream areas visible from dam crest for landslides or ground ruptures.
    - Immediately upon discovery of any damage or upon completion of each detailed investigation, a report shall be made orally to the OS.
    - Some damage to structures may not be readily apparent during the inspection immediately following an earthquake. Inspection and close monitoring of the facilities should be continued for at least 48 hours. A secondary inspection shall then be made 2 weeks to one month after the initial inspection.

4. **No damage** - If no damage is evident, the MPO shall notify the Director of Hydro Operations who will decide whether a thorough inspection such as outlined in Item 3 above, should be made, having regard to the intensity of the earthquake.

4.4 Sabotage, Bomb Threat, Riot

4.4.1 Sabotage

If there are indications that an act of sabotage has been committed at the dam, local staff shall notify the MPO, who shall:

1. Ensure safety of members of public and NTPC employees at or near dam. This may include evacuation of the dam site.

2. Determine (if possible) whether saboteur is still at the dam site and assess sabotage potential and situation.

3. Notify:

    - RCMP
    - Director of Hydro Operations
    - Director of HSE

    If the saboteur has left, check the area for evidence that might aid in apprehending him/her.

4.4.2 Bomb Threat

If a telephone bomb threat is received, the person receiving the call should:

1. Keep the caller on the line as long as possible. Ask caller to repeat message. Try to record every word spoken by caller.

    If caller does not indicate the location of bomb or time of detonation, ask caller for this information.

    Listen closely to their voice: sex, voice quality, accent, or speech impediment.

    Pay particular attention to background noises such as motors running or music that could give a clue to location from which the call is made.

2. Notify the MPO, who shall then notify:

    - RCMP
    - Director of Hydro Operations
    - Director of HSE

3. Evacuate dam site under supervision of the MPO.

If a search is conducted for a bomb, use of radios during the search should be avoided; radio signals could cause premature detonation of a blasting cap. If during the search a suspicious package or object is found, **DO NOT TOUCH**. It should be left for trained personnel to remove or disarm.

4.4.3 Riot

If there is a riot or demonstration at the dam, the MPO shall:

1. Ensure safety of members of public and NTPC employees at or near dam. This may include evacuation of the dam site.

2. Lock all gates and doors.

3. Notify:

- RCMP
- Director of Hydro Operations
- Director of HSE

4.5 Floods

4.5.1 Early Warning

The watershed of the Nonacho and Twin Gorges reservoirs contain a large quantity of lakes. These lakes act to hold back and slow down snowmelt and rainfall runoff before it reaches the Taltson River and its main tributaries.

Consequently, it takes a certain amount of time (i.e., up to two months) after a major storm event or after the start of snowmelt before the ensuing reservoir inflows reach a peak. If the forecasted peak inflow is very high, then a two-month early warning period is available to organize a wide range of mitigative measures. Initially this would involve planning and organizing.

4.5.2 Mitigative Measures

Nonacho Reservoir - Large amounts of water are stored in the Nonacho reservoir (up to 1.11 billion m3 of water). The normal range of licensed water levels varies from 318.2m to 320.0m. The maximum licensed operating level of the Nonacho dam, (valid only during periods of high flow) is 321.8m. Water license permits the use of between 42.5m^3/s and 68m^3/s. A flow rate of 68m^3/s is not enough to operate the hydro plant at full load, as the plant needs 99m^3/s. The remainder of water needed to run the plant must come from the watershed area below storage dam.

Due to the presence of the Tronka Chua Gap, the spillway, and the dam control gates, worst case scenario waters in the Nonacho reservoir are not be able to exceed the top of the dam at 321.8m, and the dam cannot be breached. Spill gates in the dam are manually controlled to maintain appropriate water levels at the Twin Gorges dam.

Twin Gorges Reservoir - Water levels in the Twin Gorges reservoir are normally maintained between 237.4m and 239.3m. Due to the presence of the South Valley Spillway, water levels should never be high enough to breach the dam at 241.7m (the core elevation).

Water passes over the spillway into Trudel Creek, bypassing the Twin Gorges dam. It then travels approximately 30km and ends up 2km below the Twin Gorges dam. Approximately 1700m^3/s can pass over this spillway.

When experiencing high water levels at the Twin Gorges dam, additional monitoring and preparatory measures shall be taken based on the water level observed, they include:

Forebay Level of 789.40ft / 240.60m:

- Begin submitting daily reads of the forebay level to EOC committee (including MPO and Dam Safety Engineer), and complete informal visual inspection of the dam.

Forebay Level of 790.40ft / 240.90m:

- Submit daily reads of the forebay level to EOC committee.

- Begin weekly formal inspections of the dam (full walk around and inspection checklist).
- Send crew to site to ensure all heavy equipment is in working order.

Forebay Level of 792.00ft / 241.40m:

- Declare Level 1 Emergency based on an emerging situation that requires enhanced monitoring.
- Complete daily formal inspections of the dam.
- Dam Safety Engineer or designate mobilize to site.
- Begin stockpiling material to be used for remedial action.

A list of available equipment and borrow locations is provided in Section 6 of this document.

4.5.3 Downstream Flooding Hazards

Historical Peak Flows

No serious downstream flood damage has been reported in the over forty-year history of Taltson hydroelectric development. Minor flooding of trapper's cabins constructed within the flood plain downstream has occurred, most recently in 2020.

Dam Breach due to Earthquake

The Taltson dams are gravity dams of moderate head. Consequently, they are very resistant to earthquake damage. If either dam were to be breached, very little downstream damage would occur because the small volumes of water that would be released would be dissipated quickly by lakes encountered downstream.

The force of the earthquake would forewarn NTPC personnel at or in the vicinity of the Taltson facility, giving them time to move to adjacent high ground while the breach develops and widens. From there the control center operator can be contacted by radio or satellite phone. The highest rise in water levels would occur just below each dam.

4.6 Failure of Spillway Operation Equipment During an Emergency

If a control gate at the Nonacho dam fails to operate, the field crew shall:

1. determine the possible cause of failure and effects on reservoir operations. and, if gate failure could endanger one of the dams, determine what immediate assistance is required to remedy the problem including:
    - replacement parts; manpower; and
    - repair equipment.
2. determine temporary replacement or operating procedures. contact MPO, report data and, in the event of conditions not predicted or not covered by operating instructions, request directions on how to proceed.

3. if dam security is threatened, notify the MPO, Director of Hydro Operations, and Dam Safety Engineer.

4.7 Springs, Seepage, or Increased Drainage

Periodic observations of seepage are taken by hydro operators. If new springs or seepage are observed or existing ones increase abnormally, the observer shall report the following to the MPO and Dam Safety Engineer.

1. Location of springs or seeps, including identification of structure or embankment and a description of affected area, including:

    - Size.
    - Estimated discharge or change of discharge.
    - Nature of flow - clear or cloudy.
    - Type of flow - wet spot, slow seepage, boil, or piping; and
    - Reservoir and tailwater elevations.

The MPO and/or Dam Safety Engineer shall decide what immediate emergency measures are necessary.

4.8 Droughts

4.8.1 Aquatic Habitat and Downstream Licensed Minimum Water Release Requirements

The minimum flow release requirement below the Nonacho reservoir is 42.5m^3/s, required to maintain flows and water depth in the river channel.

4.8.2 Licensed Minimum Water Level Requirements

The level of Twin Gorges reservoir must be kept above 228.9 meters according to its water license unless a written request is filed with the Water Board and a letter of approval received. The Nonacho reservoir must be kept above 319.3 meters according to its water license unless a written request is filed with the Water Board and a letter of approval received.

4.9 Severe Storms

Heavy rainfall or snowfall, high winds and/or heavy icing conditions can result in building and equipment damage, major transmission line outages, communications failure, and road washouts.

If severe weather conditions are forecast or experienced, local staff shall:

1. Keep abreast of forecasts and storm developments. Maintain close surveillance of all dam facilities.

2. Immediately report any storm damage or personal injury to the MPO. The MPO shall:

    Notify the Director of Hydro Operations and the Chief Operating Officer of any damage. Take action to restore services and repair damages.

3. Ensure safety of any members of the public in area.

    If the MPO is informed of an accident already reported to the RCMP, he shall report the event to the Director of Hydro Operations.

5.0 General Responsibilities Under the EPP

5.1 Dam Owner/Operator Responsibilities

During an emergency condition:

1. Identification of the emergency condition.
2. Notification of the RCMP by Manager, Plant Operations.
3. Implementation and direction of emergency repairs.
4. Update emergency status to the RCMP.
5. Provisions for security measures at the dam; and
6. Reporting termination of emergency situation on-site at the dam.

In non-emergency conditions, owner/operator must also provide for:

1. Routine maintenance and operations of the dam.
2. Routine surveillance of the dam; and
3. Annual review, updating and distributing of the EPP.

5.2 Plant Operations Manager Responsibilities

Responsibility for the day-to-day operations of the Taltson dams rest with the MPO whose headquarters are the Yellowknife Office and can normally be contacted there. Local staff attend the Twin Gorges dam each day, while the more remote Nonacho dam is attended much less frequently. Normal working hours are 0800 to 1700 hours, Monday to Friday at Fort Smith and Taltson Hydro. Employees at Taltson are on standby on weekends.

During an emergency, decisions regarding operations at the Taltson Facility shall be made by the MPO. Where advice or special expertise is required, it is the responsibility of the MPO to obtain guidance from NTPC Engineering, and others such as government agencies or outside consultants.

An organization chart showing the relationships between key NTPC personnel identified in the EPP is shown in Section 1-1.

6.0 Telecommunication Information

6.1 Telephone and Radio

This Section briefly describes the telephone and radio facilities available at Taltson.

Communications to the Taltson facility are via a telephone, radio, and satellite phone. Access can be obtained by calling directly the numbers shown in Section 1.2 or by phoning the control center operator in Yellowknife at 669-3370. The powerhouse and staff house are equipped with phone access.

6.2 Road Communications

Approximately 20km of year-round gravel road exists at Taltson between the power plant, the airstrip, and the gravel pit.

6.3 Air Communications

1. Fixed Wing Aircraft

   A 1.2km gravel airstrip exists at the Taltson facility suitable for landing aircraft on wheels all year round, during daylight hours. V.F.R. flight rules apply. Landing of float-equipped planes on all the reservoirs is feasible during daylight hours and in suitable weather conditions.

   Landing of ski-equipped planes on the reservoirs is normally feasible during winter months during daylight hours and in suitable weather conditions, however the airstrip is typically used.

2. Helicopters

   There are numerous possible helicopter landing areas at each dam, they can land on the dams themselves or at the Twin Gorges airstrip for access to Twin Gorges / South Valley Spillway.

6.4 Power Sources

6.4.1 Water Discharge Control Facilities Power Sources

Normal power for all station operations, including all power intake gates and spillway gates, is supplied by station service from the local powerhouse. In the event of a complete station outage, the Facility has a backup diesel generator to supply station service starting automatically on loss of station service.

6.4.2 Communication System Power Sources

All communication system power sources are battery operated, charged by station service. Batteries last for several hours without recharging.

6.5 Available Onsite Equipment and Repair Material

There is a rock outcrop area approximately 2km from the Twin Gorges dam where materials may be obtained to repair a breach which will require blasting, shown in Figure 6.5. There are also several borrow locations for gravel and clay materials around the airstrip and on the road to South Valley Spillway, additional details on these locations can be found in the *Taltson Quarry Operations and Reclamation Plan.*

The following heavy equipment is located at Taltson:
Champion 710A Grader
D5 Caterpillar Crawler
938K Caterpillar Loader
160M Caterpillar AWD Motorgrader
323-07 Caterpillar Track Excavator
315 Caterpillar Excavator
WRT Packer

AMMAN Drum Roller
1998 1-Ton GMC 4x4 Pickup Truck
FL80 Freightliner Dump Truck
Freightliner M2 Dump Truck
12’ Yamaha Aluminum Boat with 9.8hp Outboard Motor
16’ Lund Boat
Ford F350 Flat Deck Truck
Ford 350 Transit Van
1000XL Aggregate Screener
2002 Honda 4x4 ATV at Airstrip for Emergency Response
2007 Yamaha Snowmobile
2018 CAN-AM Side-by-Side

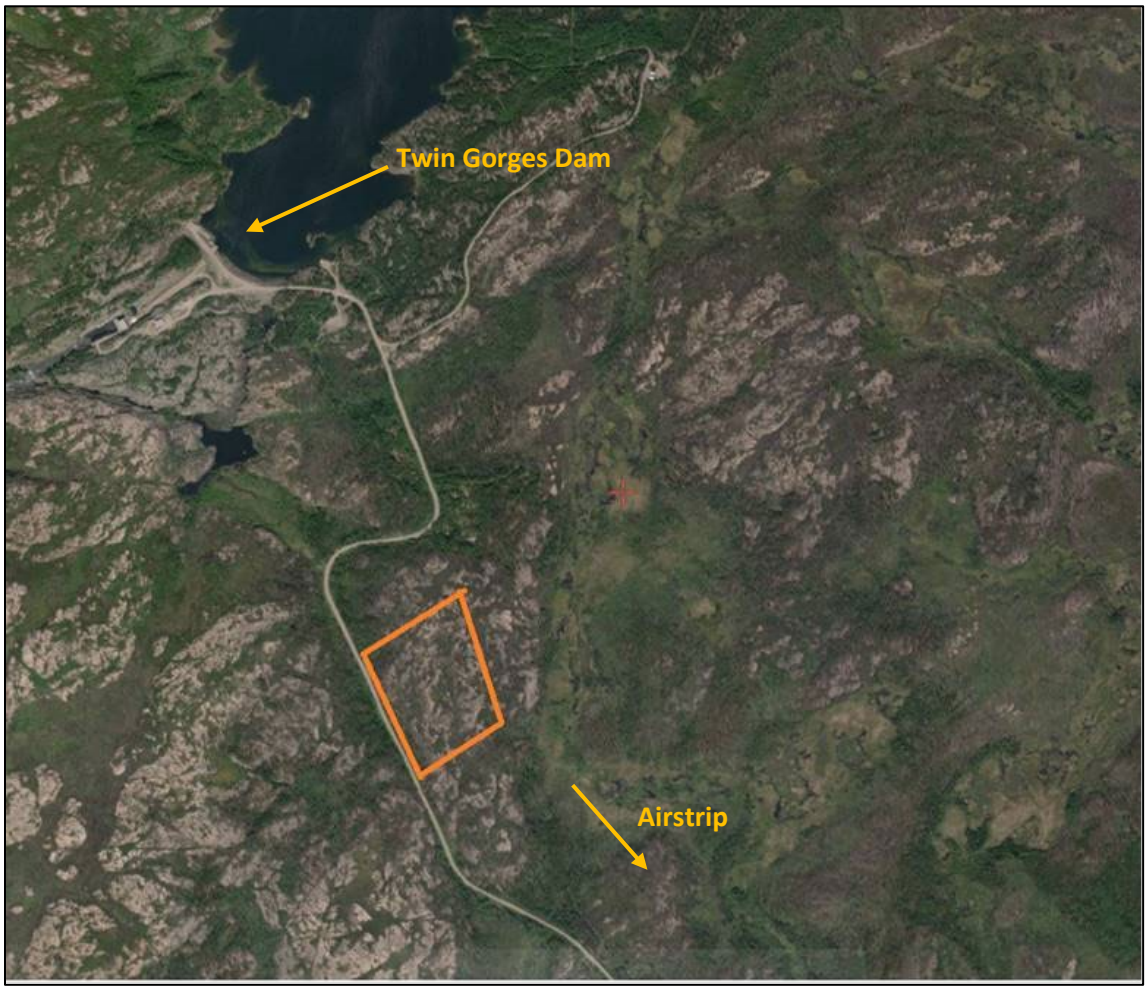
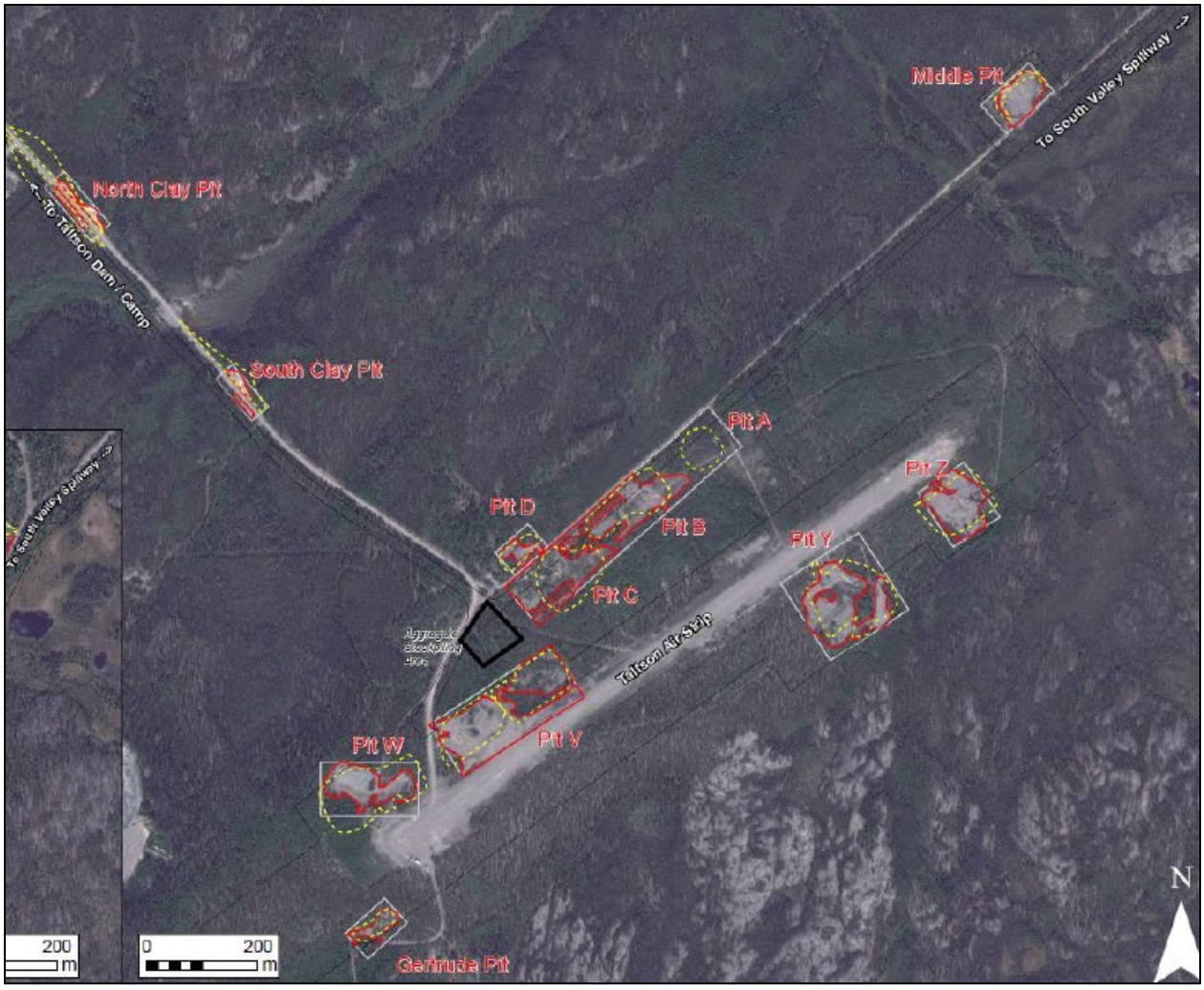


Figure 6.5.1: Approximate Location for potential rock quarry.



7.0 Inundation Maps

To date, the area of inundation for the two Taltson dams has not been determined. This would be determined by estimating the area covered if all water in a dam's reservoir was immediately displaced into the inundation area. This method neglects the time taken for the water to reach the inundation area and neglects the outflow from the area. This method calculates the inundation area to be slightly larger than the worst-case scenario. This is considered a high factor of safety for this study.

8.0 Appendix A – Maintenance and Testing of the EPP

The Safety & Environment Manager shall ensure that local staff maintains familiarity with the continually updated EPP by scheduling period reviews, briefings and operational tests as follows:

Twice Per Year - Phone numbers and responsible officials' names shall be verified, and the appropriate pages of the EPP updated and distributed. (A complete list of all updates to the plan shall be maintained at the front of the EPP.)

Annually - All affected personnel shall be given a refresher briefing on the EPP. At the option of the System Control & Hydro Planning Manager this may be done separately or as a part of a regularly scheduled safety meeting. A record of all briefing sessions shall be maintained on file by the System Control & Hydro Planning Manager, showing the dates of the sessions, the location where they were held, and the names of the individuals conducting and attending them.

Every 2 Years – All involved personnel should be given a training drill on the EPP. This may consist as a tabletop exercise or an actual test of timely response to spillway operation.

Emergency Training Register			
Date:	**Description of Activity:**	**Participant List:**	**Conducted By:**
November 2020	Emergency Response Training Presentation	All NTPC	Josh Clark (HSE)

9.0 Appendix B – List of Third-Party Contacts - Suppliers

Generator Rentals:

Name	**Power Plus Rentals**
Contact	Dave Lassu
Address	7003 Girard Road Edmonton, AB T6B 2C4
Phone No	780 485 0066
Fax No.	780 485 0041
Cell no	780 721 0971
E-mail Add.	dlassu@telusplanet.net
Max Size Unit	780 KW
Voltage	600

Name	**Grizzly Power**
Contact	Kevin Nelson
Address	1400-10 Street Nisku, AB T9E 8J4
Phone No	780 955 3305
Fax No.	780 955 2260
Cell no	
E-mail Add.	generators@grizzlypower.com
Max Size Unit	
Voltage	

Name	**Wirtenan Electric**
Contact	
Address	5635 Gateway Boulevard Edmonton, AB T6H 2H3
Phone No	780 434 8421
Fax No.	780 437 2658
Cell no	
E-mail Add.	wesco@wirtenan.com
Max Size Unit	Transformer, Elect. Equipment

Name	**Finning – Hay River**
Contact	Mitch Thompson, Cust. Serv. Mgr
Address	23 Industrial Drive Hay River, NT X0E 0R6
Phone No	867 874 6537
Fax No.	867 874 6570
Cell no	867 874 1104
E-mail Add.	mathompson@finning.ca
Finning 24 Hr	**line – 1 888 346 6464**

Name	**Finning – Yellowknife**
Contact	Patrick Kirychuk
Address	327-8 Old Airport Road Yellowknife, NT X1A 3T3
Satellite Ph:	403 982 0933
Phone No	867 766 3578
Fax No.	867 873 6867
Cell no	867 444 3195
E-mail Add.	
General Line,	**Parts and Service Sales**

Name	**Finning – Yellowknife**
Contact	Ron Drewry
Address	327-8 Old Airport Road Yellowknife, NT X1A 3T3
Phone No	867 920 7481
Fax No.	
Cell no	867 444 4500
E-mail Add.	
Manager NWT	

Contractors:

Name	**Nuclear Electric**
Contact	Ron Danyluk
Address	Box 57006, 2020 Sherwood Drive Sherwood Park, AB T8A 5L7
Phone No	780 448 1903
Fax No.	780 448 1905
Cell no	
E-mail Add.	
	Electrical Services

Name	**Adco Power**
Contact	Bill Slater
Address	8750 – 58 Ave Edmonton, AB T6E 6G6
Phone No	780 465 3265
Fax No.	780 466 8086
Cell no	780 910 9410
E-mail Add.	slater@adcopower.com
	Electrical Mechanical Services

Name	**Janus Project**
Contact	Laurie Denys
Address	#105 8712-48 Ave Edmonton, AB T6E 5L1
Phone No	780 450 1818
Fax No.	780 465 1116
Cell no	
E-mail Add.	ldenys@janusprojects.com
	Electrical Mechanical Services

Name	**South Side Porta Weld Ltd**
Contact	Danny Kernychny
Address	8110 Davies Road Edmonton, AB T6E 4N2
Phone No	780 465 4861
Fax No.	780 440 6967
Cell no	780 499 8469
E-mail Add.	
	Mechanical Services

Name	**Odesco**
Contact	Alec
Address	5330 89 Street Edmonton, AB T6E 5G9
Phone No	780 414 1422
Fax No.	780 448 3684
Cell no	
E-mail Add.	
	Electrical Services

Name	**Lapka Electric**
Contact	Joe Lapka
Address	835 Dusseault Crt Yellowknife, NT
Phone No	867 873 5631
Fax No.	867 873 8446
Cell no	867 444 4013
E-mail Add.	lapkael@ssimicro.com
	Electrical Services

Switchgear Parts & Repairs:

Name	**Laird Electric**
Contact	Kevin Pydde
Address	4410 97 Street Edmonton, AB T6E 5R9
	TOLL FREE: 888 450 9636
Phone No	780 450 9636
Fax No.	780 463 3035
Cell no	780 914 7417
E-mail Add.	Kevin.pydde@insulationholdings.com
	Electrical Services

Name	**Schneider Electric**
Contact	
Address	12825 1144 Street Bonaventure Industrial Park Edmonton, AB T5L 4N7
Phone No	780 453 3561
Fax No.	780 451 5085
Cell no	
E-mail Add.	
	Electrical Services

Governors:

Name	**Henery & Sons**
Contact	
Address	87 Aurora Pointe Claire, PQ
Phone No	514 466 2063
Fax No.	514 466 3275
Cell no	
E-mail Add.	
	Electrical Services

Name	**Woodward – Alberta Governor Service**
Contact	Jack Hauck
Address	5977 103 A Street Edmonton, AB
Phone No	780 437 4673
Fax No.	780 434 2339
Cell no	
E-mail Add.	
	after hours: 467 8109 or 922 4504 **Electrical Services**

Engine Suppliers:

	MAN B&W
Engine Make	Ruston, Paxman, Mirrlees, MAN
Rating	500 to 6,480 kW
RPM	1,200 to 550 RPM
Name	**MAN B&W Diesel Canada Ltd.**
Contact	John Hawkes
Address	355 Wyecroft Road
	Oakville, ON L6K 2H2
Phone No	905 845 3444
Fax No.	905 842 7892
Cell no	
E-mail Add.	jhawkes@manbw.ca

Engine Make	
Rating	500 to 6,480 kW
RPM	1,200 to 550 RPM
Name	**International Energy Systems**
Contact	Doug Cullen
Address	570 Ebury Place
	Delta, BC V3M 6M8
Phone No	604 540 5080
Fax No.	604 540 5090
Cell no	
E-mail Add.	ies@iesl.com

Engine Make	**Caterpillar**
Rating	227 to 4,400 kW
RPM	1,800 to 900 RPM
Name	**Finning Power System**
Contact	Gary Warneboldt
Address	6735 11 Street NE
	Calgary, AB T2E 7H9
Phone No	403 295 5740
Fax No.	403 295 5725
Cell no	
E-mail Add.	gwarneboldt@finning.ca

Engine Make	**Caterpillar**
Rating	227 to 4,400 kW
RPM	1,800 to 900 RPM
Name	**Powell Arctic Ltd**
Contact	Chris Moskal
Address	1455 Buffalo Place
	Winnipeg, MB R3T 1L8
Phone No	204 453 4343
Fax No.	204 478 3379
Cell no	
E-mail Add.	moskal@powell.ca

Engine Make	**Detroit Diesel MTU**
Rating	270 to 4,400 kW
RPM	1,800 to 1,200 RPM
Name	**Waterous Detroit Diesel - Allison**
Contact	Jerry Neddow, Nick Kwasnycia
Address	10025 51 Ave
	Edmonton, AB T6E 0A8
Phone No	780 437 8288, 780 437 8274
Fax No.	780 437 5864
Cell no	780 915 5762
E-mail Add.	jneddow@wdda.com

Engine Make	**Detroit Diesel, EMD**
Rating	780 to 3,600 kW
RPM	1,200 to 900 RPM
Name	**Midwest Power Products**
Contact	David Jones
Address	1460 Waverley Street
	Winnipeg, MB R3T 0P6
Phone No	204 452 8244
Fax No.	204 452 2153
Cell no	204 228 9735
E-mail Add.	djones@midwestdda.com

Engine Make	**Cummins**
Rating	36 to 1,860 kW
RPM	1,800 RPM only
Name	**Cummins Alberta**
Contact	Gary Potter
Address	11731 181 Street
	Edmonton, AB T5S 2K5
Phone No	780 454 9365 Ext. 233
Fax No.	780 452 9887
Cell no	780 940 1768
E-mail Add.	gary.a.potter@cummins.com

Engine Make	**Wartsila**
Rating	690 to 11,850 kW
RPM	1,800 to 720 RPM
Name	**Wartsila NSD Canada Inc.**
Contact	Gordon Murrin
Address	164 Akerley Blvd.
	Dartmouth, NS B3B 1Z5
Phone No	902 468 1264, 800 468 1264
Fax No.	902 468 1265
Cell no	
E-mail Add.	

Voltage Regs	
Rating	
RPM	
Name	**Innovelec**
Contact	W. M.. (Bill Cackett)
Address	3 Rhatigan Road East
	Edmonton, AB T6R 1M9
Phone No	780 430 6155
Fax No.	780 430 6155
Cell no	780 905 8748
E-mail Add.	bcackett@shaw.ca

Outside Agencies:

A copy of the EPP will be sent to all agencies involved in the emergency procedures as listed in Section 6.1.

NTPC will revise and update the EPP as necessary and arrange for distribution of the revisions to all outside agencies. A record of review by outside agencies shall be maintained on file by the OS.

Surveillance:

Routine inspections shall be made once per year by NTPC personnel, usually in the fall. A Water Resource Officer from INAC generally accompanies NTPC personnel on the inspection each year. A formal dam safety review is conducted every 5-7 years in line with consequence classifications of NTPC dams.

Public Facilities:

There are no public facilities at the Taltson dams.