

KAGRA Collaboration
meeting (in Japanese)
15-October, 2014

KAGRA Safety Control

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Legal acts and Regulations

- KAGRA cavern is not a mine but the mining concession is owned by a company (Kamioka mining Ltd.)
- The supervisory authorship belongs to the University of Tokyo
- We have to accord with legal acts and regulations applied to this pseudo-mining facility
- These acts were summarized by N. Ohishi (following three pages)

Safety Overview

- KAGRA: unique GW detector
 - located underground
 - cryogenic mirrors
- Safety management is indispensable
- Occupational safety and health
 - Japanese national universities incorporated in Apr. 2004.
 - safety management: in compliance with

Labor Standards Act (労働基準法)

Industrial Safety and Health Law (労働安全衛生法)

Safety Overview

Relevant Laws and Regulations

Labor Standards Act

Industrial Safety and Health Law

Enforcement Order of the Industrial Safety and Health Act

Ordinance on Industrial Safety and Health (安衛則)

The Safety Ordinance for **Cranes** (クレーン則)

Ordinance on Prevention of **Organic Solvent** Poisoning (有機則)

Ordinance on Prevention of **Ionizing Radiation** Hazards (電離則)

Ordinance on Prevention of **Anoxia**, etc. (酸欠則)

Guideline for prevention of **laser** hazards

Guidelines for promoting **mental health** care

Working Environment Measurement Law

Safety Overview

Relevant Laws and Regulations

Ministry of Economy, Trade and Industry

High Pressure Gas Safety Act

Mine Safety Act

Electricity Business Act

Fire and Disaster Management Agency

Fire Service Act

Ministry of the Environment

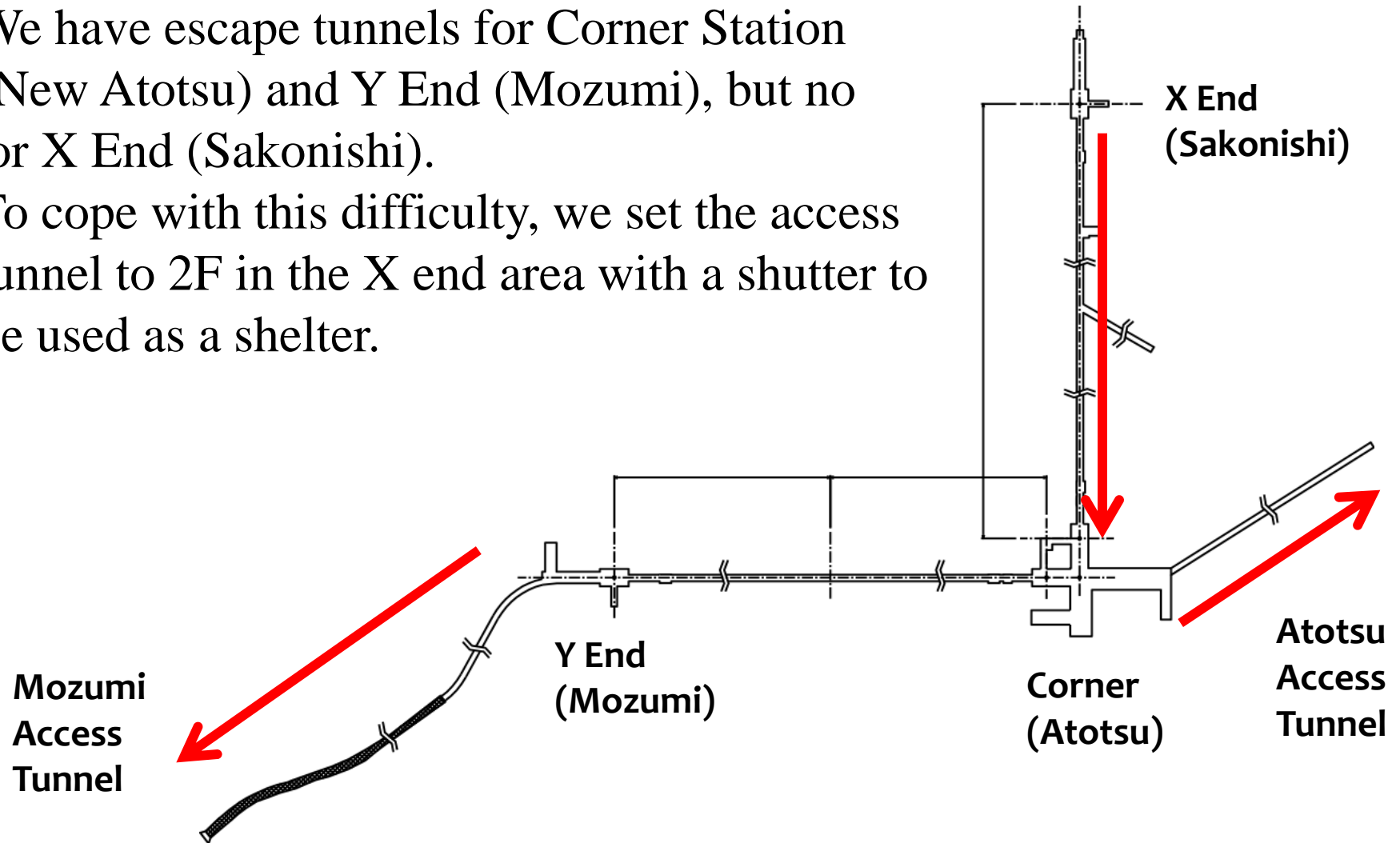
Water Pollution Control Law

Content in this report

- Evacuation routes in the case of emergency
 - Evacuation route
 - Emergency contact details
- Evacuation shelter at X-end
- Management of entrance of workers and researchers
 - Safety manual in cavern
 - Personal record
 - Work application form

Evacuation Routes

- We have escape tunnels for Corner Station (New Atotsu) and Y End (Mozumi), but no for X End (Sakonishi).
- To cope with this difficulty, we set the access tunnel to 2F in the X end area with a shutter to be used as a shelter.

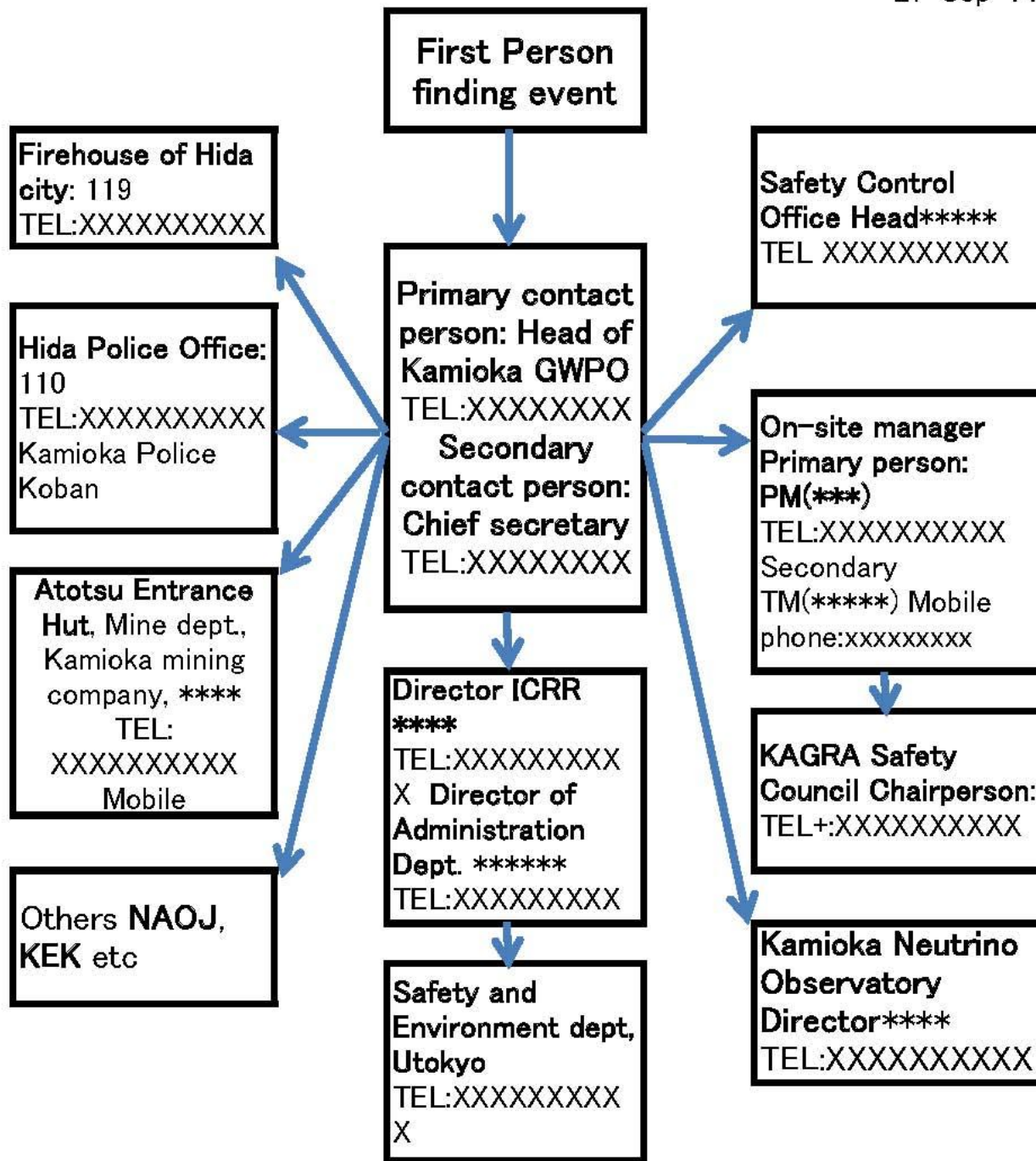


Carbon monoxide alarm

- Alarm at 20ppm level
- Combustion engines produce high rate emission of CO
- Construction in KAGRA cavern necessarily produces higher level of CO
- Take care of yourself if you work near X-end
- Always keep the CO monitor

KAGRA Cavern Emergency Contact Details

27-Sep-14

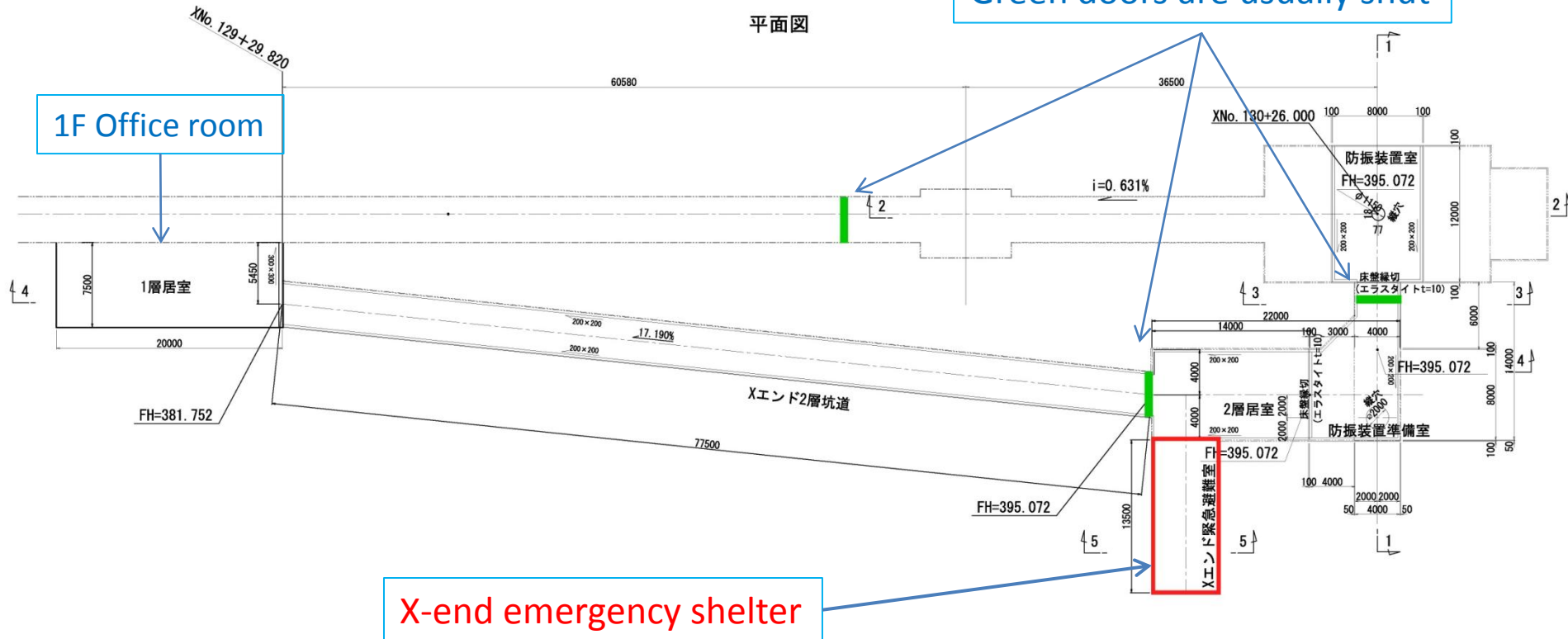


Evacuation Shelter at X-end

(2 層)
平面図

Green doors are usually shut

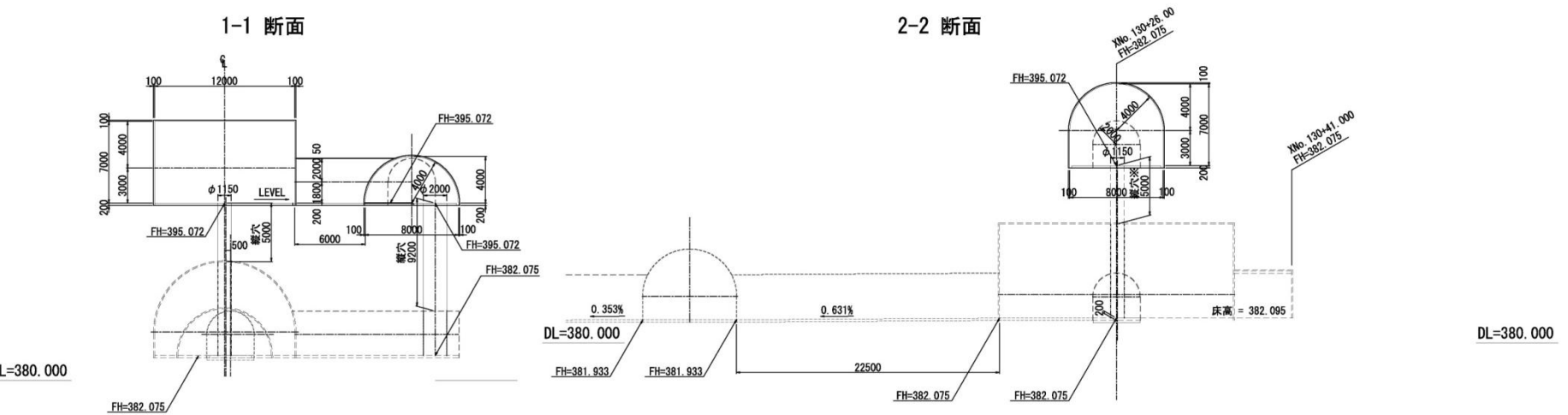
1F Office room



X-end emergency shelter

1-1 断面

2-2 断面



Emergency evacuation at X-end area

- In case fire arises around the cryostat, escape toward the center room as much as possible (ride on the electric bike parked at the down side of the slope, security goods equipped there)
- In case fire arises near 1F office room, since impossible to escape toward the center, enter the shelter (separated by concrete and smoke shield wall, equipped with security goods including oxygen bombe, food, water that enable to live at least three days, 5 persons)

Safety manual in cavern

<http://gwcenter.icrr.u-tokyo.ac.jp/...>

http://www.icrr.u-tokyo.ac.jp/kankyo/2014/SafetyManual_2014j

- Beginner's lesson
 - Submit personal record
 - Take licenses or certifications (car, crane, lifter, high pressure gas, laser, organic solvents, heavy machines, hazardous materials, registered electrician works)
- Procedure before coming to Kamioka
 - Define the task leader
 - The task leader has to make registration of the task in prior
- Work hours and security tools
 - Standard shift (8:30-17:00) & Extra shift (17:30-11:30)
 - Entrance and exit time are recorded for each task group
 - Entrance by single person is not allowed
 - Helmet with light, oxygen meter, etc. are supplied
- Transportation
 - Diesel car, Electric car, getting a lift in MESCO's car
- Work force in cavern is always monitored at the secretary office of GWPO
- Handling Hazardous materials
- Emergency

Personal Record form

KAGRA Peronal Record (Form 1)

Filled(Renewed) _____ / _____ / _____

Private information below is used for management of Safety & Health.

The data is secured by KAGRA Safety Control Office and not presented to third party except legal request.

In case leaving from research group, related data is erased after informed.

	Birthday/Month/Year		Blood type	Photo (not needed)
Name			RH type	
Address	(〒 -)			
TEL		e-mail		
Advisor		e-mail		
Affiliation				
Address	(〒 -) TEL			
Insurance※	<input type="checkbox"/> Organization(Workmen's compensation insurance) <input type="checkbox"/> Student Education&Research Insurance (liability insurance) <input type="checkbox"/> Overseas travel insurance <input type="checkbox"/> Otherds()			
Contact numbers at emergency				
Name	Relation	Phone number	Address	
Qualifications (Experined year)				
License	<input type="checkbox"/> Car(year) <input type="checkbox"/> Health manager <input type="checkbox"/> Environment manager <input type="checkbox"/> Crane/Derrick(year) <input type="checkbox"/> Travelling Crane(year) <input type="checkbox"/> Registered electrician <input type="checkbox"/> Others()			
Technical lessons (Operator chief/operator)	<input type="checkbox"/> Operator chief for organic solvents <input type="checkbox"/> Operator chief under oxygen deficient danger <input type="checkbox"/> Floor cont crane(year) <input type="checkbox"/> Forklift(year) <input type="checkbox"/> Loading(year) <input type="checkbox"/> Travelling crane(year) <input type="checkbox"/> Others()			
Special training	<input type="checkbox"/> Loading(year) <input type="checkbox"/> Crane(year) <input type="checkbox"/> Travelling crane(year) <input type="checkbox"/> Work carriage(year) <input type="checkbox"/> work under oxygen deficient danger <input type="checkbox"/> registered low voltage electrician <input type="checkbox"/> Others()			
Lessons (UTokyo)	<input type="checkbox"/> Laser <input type="checkbox"/> High pressure gas <input type="checkbox"/> Chemical substants <input type="checkbox"/> Others()			
Lessons (KAGRA)	<input type="checkbox"/> Working education <input type="checkbox"/> Forklift <input type="checkbox"/> Crane <input type="checkbox"/> Tractor			

☆ Commitment Oath

- ・I will read the manual and respect rules and safety standard for working with protecting myself and otherts
- ・I will report any accident on the same day even if it is not serious.
- ・I will inform at once when I find dangerous part or hazardous place.
- ・I agree with the policy of handling personal data.

Signature/Stamp _____ 印

※Students and PDs are requested to have Student Education Research Accident Insurance with liability insurance or equivalent under the responsibility of their affiliations.

※Confirm the insurance validity on the work in cavern (as positioned as regular curriculum for students)

※JSPS foreign researchers are covered by overseas travel insurance.

※Researchers who belong to other organizations are requested to be ICRR research collaborators.

Work application form

Work Application (mainly for KAGRA cavern working)

Date of submission (Y) (M) (D) To: Task Manager(Y.Saito, T.Uchiyama ※2 weeks at the latest in prior to the work

Task group name		Head of Work		Work area																
All Persons (affiliation)																				
	(In Total)																			
Name of the work	transportation by company	Name of Company	Work description in detail																	
	<input type="checkbox"/> apply <input type="checkbox"/> none																			
Hazrdous materials	<input type="checkbox"/> Crane <input type="checkbox"/> Laser <input type="checkbox"/> High Pressure Gas <input type="checkbox"/> Organic Solvents <input type="checkbox"/> Tractor <input type="checkbox"/> Forklift <input type="checkbox"/> Milling machines <input type="checkbox"/> Others()																			
Hazrdous tasks	<input type="checkbox"/> Carrige <input type="checkbox"/> Transport of Heavy stuff <input type="checkbox"/> Task inside chambers <input type="checkbox"/> Others() <input type="checkbox"/> We have qualifications needed for the work																			
Plan of Arrival date	How to come	Office request	Lunch Box	Meeting room request	Dormitory Request															
(M) (D) (time)		<input type="checkbox"/> Yes(persons) <input type="checkbox"/> No	<input type="checkbox"/> Yes (detaoil below) <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> no	<input type="checkbox"/> Yes <input type="checkbox"/> No															
Gant chart																				
Dates	9/29	9/30	10/1	10/2	10/3	10/4	10/5	10/6	10/7	10/8	10/9	10/10	10/11	10/12	10/13	10/14	10/15	10/16	10/17	10/18
days	Mon	Tue	Wed	Thu	Fri	Sat		Mon	Tue	Wed	Thu	Fri	Sat		Mon	Tue	Wed	Thu	Fri	Sat
Working in cavern																				
Planed end time of the Work outside regular time slot																				
Number of lunch boxes																				
Number of protection tools																				
※Comment (request to GWPO office etc.)																				