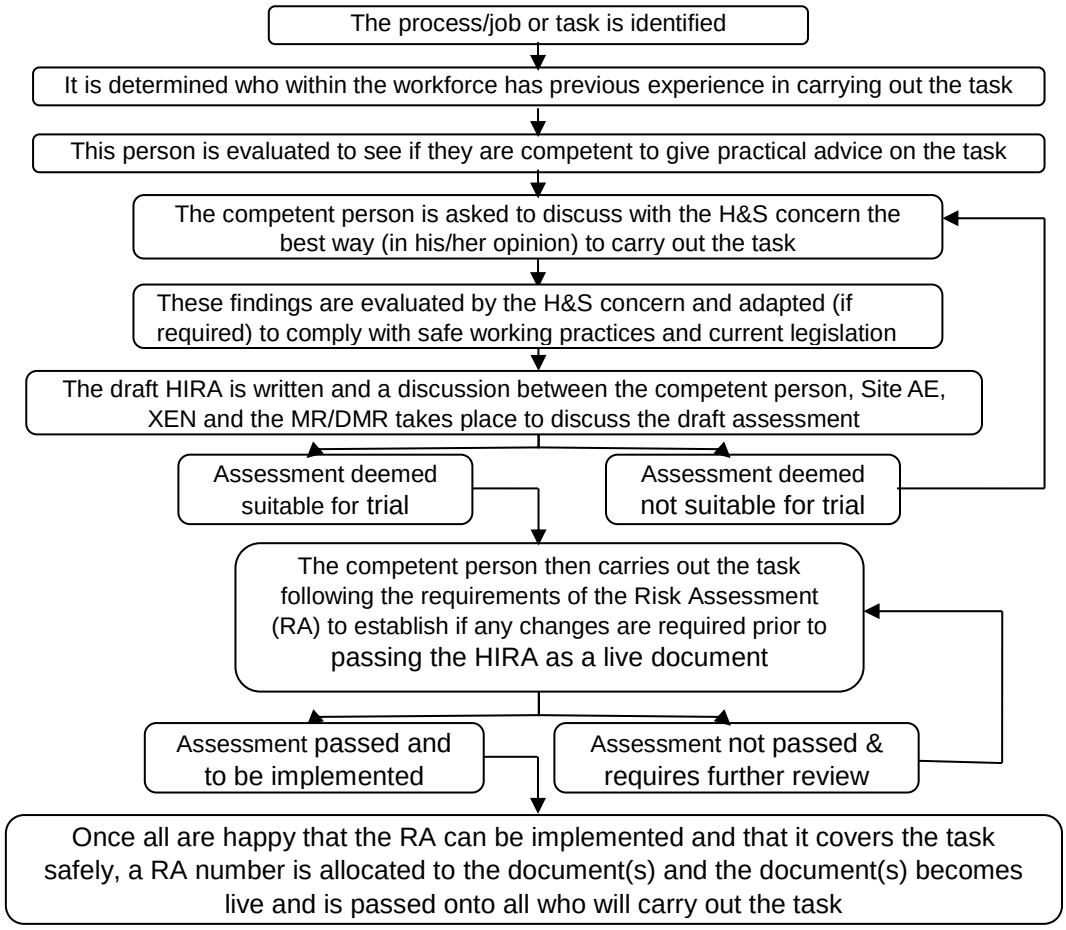
RISK ASSESSMENT

Risk Assessment of PGCB

Following OHSAS 18001:2007

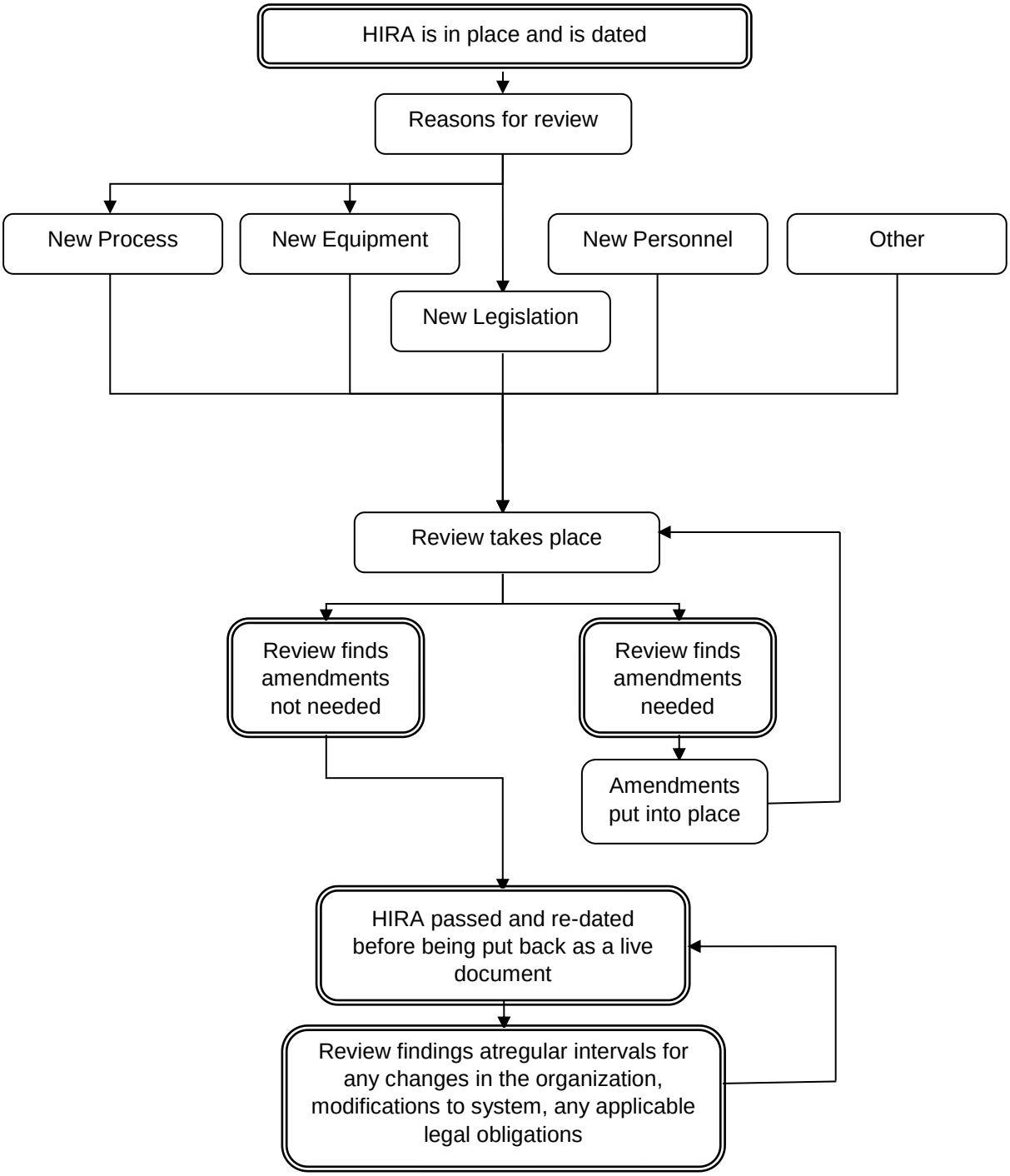
Risk Assessment & Control:

PGCB takes assessment of risk and hazards that may be evident during its undertakings as a priority.
To accommodate and facilitate risks and hazards that may be evident either on site or at the head office facility, risk assessments and work method statements are carried out on work activities. These risk assessments and work method statements form a part of the system that as a whole encompasses all health & safety control measures.
These risk assessments, work method statements and other documents are formulated in a methodical way by the Health & Safety concerned to ensure that a safe working environment is in place at all times.
The assessment and control of risk is a major factor in ensuring that a safe working environment is achieved. The procedure HSP-OHS-1 is followed for the formulation of risk assessments and work method statements is as shown in the flowcharts as follows.



Once the process shown has been carried out and the risk assessment becomes a live document, the following process is carried out to ensure that the risk assessment is current and up to date.

The flow charts within this process details the process that PGCB carry out when assessing the requirements for Hazard Identification and Risk Assessments. This procedure takes into consideration all tasks, jobs and processes carried out by PGCB employees.



Risk assessment procedure:

Risk assessment has been carried out according to the Procedure for Hazard Identification And Risk Assessment: HSP-OHS-1. This procedure can be summarized as below:

1. **Review of Facility Hazards and Risks:**
    - Develop a complete list of all Physical Item or Activity in the facilities in the Department/ Section.
    - Make a "rough draft" estimate of hazards and risks for each job. Look for hazards that are obvious and risks that are clearly serious.
    - Develop priorities based on previous experience, information on known work hazards in each area, and the number of employees who are exposed to the hazard. Draw on the personal experience of your risk assessment team. Key operational personnel may be aware of hazards that are not apparent from injury records. Their insights will help you set priorities, as well as identify additional hazards. Newly created jobs that have no history should be examined carefully to establish a preliminary priority.
    - PGCB requires that Departments and Sections use the data entry form in Facility Risk Assessments (FRA) Form to record the information gathered from the Facility Risk Assessment process.
    - The following ten steps are followed to perform FRA and complete the records:
        - break down the Physical Item or Activity into successive steps or tasks
        - identify the hazards associated with each step and task
        - identify controls in place for each hazard
        - identify occupancy or use for the activity
        - identify the Frequency that each step and task is performed
        - estimate the potential Severity of an accident associated with each hazard
        - estimate the Likelihood of an accident occurring for each hazard (given existing controls)
        - calculate the Risk
        - identify possible additional controls needed for these hazards
        - re-calculate the Risk and the % Risk reduction if controls are added
    - FRA model is then prepared after following the Facility Risk Assessments Form.
    - Classify the Risk of each activity step using the information in the bottom portion of Facility Risk Assessments Form.
    - Any step with risk identified as "intolerable" must be investigated and abated immediately. Unless specific exception is granted by the Department Head/MR in writing, the activity step will be suspended until the risk can be re-classified as no greater than "substantial."
    - Risks identified as "substantial" will require the development and implementation of a written remedial action program prior to proceeding with the work.
    - Risks identified as "moderate" or below shall be addressed through the Department's/Section's normal OHS Management System objective-setting and planning processes.

2. **Review of Job Hazards and Risks:**
    - Develop a complete listing of all jobs underway in the Division/ Department. The job list shown in Table 1 in page 7 of 8 of this document shall be used.
    - Make a “rough draft” estimate of hazards and risks for each job. Refer column 4 of Table 1 Strategy to Determine the Priority of Job Risk Assessments. Look for hazards that are obvious and risks that are clearly serious.
    - Develop priorities based on previous experience, information on known work hazards in each area, and the number of employees who are exposed to the hazard. Draw on the personal experience of your risk assessment team. Key operational personnel may be aware of hazards that are not apparent from injury records. Their insights will help you set priorities, as well as identify additional hazards. Newly created jobs that have no history should be examined carefully to establish a preliminary priority.
    - Appropriate number of jobs is decided to be assessed. All High priority jobs should be assessed as soon as practicable. This process is to be done in phases, over time. Thus, it is important to concentrate the initial efforts on those jobs that clearly present more significant risks and fill in other jobs over time.

3. **Performing the Job Risk Assessment (JRA)**
    - PGCB requires that Departments and Sections use the data entry form in Job Risk Assessments Form to record the information gathered from the JRA process.
    - The following ten steps are followed to perform JRA.
        - break down the job into successive steps or tasks
        - identify the hazards associated with each step and task
        - identify controls in place for each hazard
        - identify the number of people involved in each step and task
        - identify the Frequency that each step and task is performed
        - estimate the potential Severity of an accident associated with each hazard
        - estimate the Likelihood of an accident occurring for each hazard (given existing controls)
        - calculate the Risk
        - identify possible additional controls needed for these hazards
        - re-calculate the Risk and the % Risk reduction if controls are added
    - JRA model is then prepared after following the Job Risk Assessments Form.
    - Classify the Risk of each job step using the information in the bottom portion of Job Risk Assessments Form.
    - Any job step with risk identified as “intolerable” must be investigated and abated immediately. Unless specific exception is granted by the Department/ Division Head in writing, the job step will be suspended until the risk can be re-classified as no greater than “substantial.”
    - Risks identified as “substantial” will require the development and implementation of a written remedial action program prior to proceeding with the work.
    - Risks identified as “moderate” or below shall be addressed through the Department’s/Section’s normal OHS Management System objective-setting and planning processes.

4. **Job Stressors**
    - Note any job stressors on the JRA form. Job stressors must be factored into the risk assessment if they are present. See the list of common job stressors in Table 2 in page 8 of 8 of the document SP-OHS-1. Job stressors will increase the likelihood of an injury

5. **JRA Results:**
    - As indicated in OHSAS 18001, JRA process is used to help determine:
      • job requirements
      • training needs
      • development of controls
    - The JRA process must include some means of monitoring improvement actions added to reduce risk in order to ensure that actions are implemented on time and are effective. The use of inspections is established for this purpose.
    - Additionally, the Department/Division must consider the results of the JRA process and effects of controls when establishing annual OHS objectives. Jobs steps and tasks where injuries and incidents have occurred during the year, as well as risk levels in the Substantial category, should be considered when setting annual OHS objectives.

6. **Annual JRA Review:**
    - On an on-going basis, the Management Representative is responsible for scheduling reviews of 1/3 the number of organizational JRAs annually so that all the JRAs are reviewed at a minimum of once every three years. The purpose of such reviews is to ensure the JRAs reflect the current jobs at the site.
    - The Management Representative in consultation with Joint Environment, Occupational Health & Safety Sub-Committee will conduct review of job hazards and risks annually.
    - The review of a particular job shall be made on the level of risk assigned to hazards in prior JRAs and submit the report to MR in due time.

7. **JRA in Response to Accidents, Incidents, Non-Conformances, Corrective and Preventative Actions:**
    - As necessary, the Management Representative shall schedule and assign appropriate personnel to conduct or update a JRA in conjunction with a Critical, Occurrence, near miss or non-conformance associated with a job.

8. **Job Step or Task Change:**
    - Management Representative shall schedule and assign appropriate personnel to review all changes and modification to a job step or task where hazards have been introduced or remedied and conduct a new or modified JRA for job steps and activities under the Department's/Section's purview.
    - The use of common hazard terminology is encouraged and it simplifies the risk assessment process. The following are common terms or phrases for hazards that are used by PGCB's. They are the leading causes of workplace injuries and are listed in order of cost of wage replacement and medical payments.

- Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, or carrying of an object
- Falls on same level
- Electrocution and electrical shock
- Hazards related to jobs or tasks
- Fires
- Hazardous or toxic material exposures
- Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling
- Falls to lower level, such as falling from a ladder or over a railing
- Being struck by an object, such as a tool falling on a worker from above
- Repetitive motion
- Roadway accidents
- Being struck against an object – such as a carpenter walking into a doorframe, or cuts and skin abrasions from working in tight spaces
- Becoming caught in or compressed by equipment
- Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns

9. Before starting any job, tool box talk shall be done to ensure safe operation & maintenance as well as to ensure using required PPE and maintain safety instructions.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR BATTERY ROOM

Area/Facility Title: **Battery Room**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Inspection and maintenance at battery room	Low space	2	2	2	0	8	Proper planning, reorganize												
	Electrical shock	2	1	5	0	10	Hand gloves, safety shoes, helmet. insulated tools.												
	Battery orientation	2	1	5	0	10	Proper planning, reorganize												
	Electrolyte	2	2	5	0	20	Hand gloves, safety shoes, apron, goggle, helmet, insulated tools.												
	Suffocation	5	1	3	0	15	Ventilation fan												
	Low illumination	5	1	3	0	15	Install light												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR BATTERY ROOM

Job Title: **Battery Room** **Inspection and maintenance at battery room**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Specific gravity measurement/ Top up.	Spillage	Apron, hand gloves goggles, safety shoes, insulated tools.	N	2	2	2	3	0	24									
	Electrical shock		N	2	2	2	2	0	16									
	Short circuit		N	2	2	2	2	0	16									
Cleaning/ Tightening/ Greasing	Slipping of wrench		N	2	2	2	2	0	16									
	Short circuit		N	2	2	2	2	0	16									
Cell voltage measurement	Electrical shock		N	2	2	2	2	0	16									
	Short circuit		N	2	2	2	2	0	16									
Inspection	Suffocation		N	2	5	1	2	0	10									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (BUS)

Area/Facility Title: **Switch yard (Bus)**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency Maintenance	HV shock	3	5	4	0	60	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder. Safe distance from live parts.												
	Fall down from height	2	5	4	0	40	Hand gloves, safety shoes, safety belt. Helmet. Ladder												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (BUS)

Job Title: **Switch yard (Bus)** **Schedule & Emergency Maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Tightening/Nut Bolt changing,	Stressors	Proper isolation & grounding, hand gloves, safety shoes, safety belt, helmet. Proper use of ladder,	Y	2	2	3	3	0	36									
	Fall down From height		Y	2	1	5	4	0	40									
Changing Disc insulator.	Stressors		Y	2	2	2	3	0	24									
	Fall down From height		N	2	2	3	4	0	48									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									
Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (CIRCUIT BREAKER)

Area/Facility Title: **Switch yard (Circuit Breaker)**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency maintenance,	Height	3	5	3	0	45	Hang gloves, safety belt, safety shoes, helmet, ladder.												
	High Voltage shock	3	5	4	0	60	Proper grounding, hang gloves, safety belt, safety shoes, helmet, ladder												
	Porcelain Blast	1	5	5	0	25	Safety shoes, helmet												
	Bird or squirrel or snake	4	3	4	0	48	Inspection, horn, air gun, regular cleaning of grasses and bushes												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (CIRCUIT BREAKER)

Job Title: **Switch yard (Circuit Breaker)** **Emergency or Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening/ CB changing / Pole changing,	Stress	Hang gloves, safety belt, safety shoes, helmet, ladder, proper tools & tackle chain ton.	Y	4	2	3	3	0	72									
	Fall down from height.		Y	2	2	4	4	0	64									
	Pole or C.B charge		Y	5	1	5	2	0	50									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet, hot stick.	Y	1	2	3	3	0	18									
Measuring Insulation & conductance.	LV shock	Hand gloves safety belt, safety shoes, helmet, grounding,	Y	2	1	4	4	0	32									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (CURRENT TRANSFORMER)

Area/Facility Title: **Switch yard** (**Current Transformer)**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency maintenance.	Fall from height	3	5	3	0	45	Hang gloves, safety belt, safety shoes, helmet, proper use of ladder.												
	High Voltage shock	3	5	4	0	60	Proper Grounding, hang gloves, Safety belt, safety shoes, helmet, proper use of ladder												
Schedule & Emergency maintenance	Porcelain Blast	1	5	5	0	25	safety shoes, helmet. Maintaining safe distance												
	Bird or squirrel or snake	4	2	4	0	32	Inspection, horn, air Gun, regular cleaning of grasses and bushes												

(Contd.)

Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance											
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (CURRENT TRANSFORMER)

Job Title: **Switch yard (Current Transformer)** **Emergency and Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening/C.T changing	Stress	Hang gloves, safety belt, safety shoes, helmet, ladder, proper tools & tackle chain ton.	Y	4	2	3	3	0	72									
	Fall down from height.		Y	2	1	4	4	0	32									
	C.T change		Y	5	1	5	2	0	50									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet, Hot stick.	Y	1	2	2	3	0	12									
Measuring Insulation & conductance.	LV shock	Hand gloves safety belt, safety shoes, helmet, grounding,	Y	2	1	4	3	0	24									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR CAPACITOR BANK

Area/Facility Title: **Capacitor Bank**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Emergency & schedule maintenance	Low Space	1	5	3	0	15	Proper use of PPE, regular cleaning												
	High Voltage shock	1	5	4	0	20													
	Capacitor Blast	1	5	5	0	25													
	Bird or squirrel	3	2	3	0	18													
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												

Further Description of Controls Added to Reduce Risk:

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR CAPACITOR BANK

Job Title: **Capacitor Bank** **Emergency and Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening/ LA changing/ Cap. cell change, capacitance/ inductance test	NCT charge from semi dead part	Hang gloves, safety belt, safety shoes, helmet, 15 min delay after shutdown. Proper grounding.	Y	3	1	4	3	0	36									
	HV shock from adjacent live part		Y	2	1	4	4	0	32									
	Capacitor charge from semi dead part		Y	2	1	5	3	0	30									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet	Y	1	1	4	3	0	12									
Measuring capacitance	HV shock or Voltage induction	Hand gloves safety belt, safety shoes, helmet	Y	2	1	4	3	0	24									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR CONTROL ROOM

Area/Facility Title: **Control Room**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Room space	Low space	2	3	4	0	24	Hand gloves, safety shoes, helmet.												
Control panel Inspection.	Shock(AC/DC)	1	3	5	0	15													
Control panel	Emit heat form device and heater	5	2	5	0	50	Effective functioning of ac												
CT terminal open	Meter burning	1	5	3	0	15	Proper tighten.												
Short ckt.	Fire	3	5	3	0	45	Firefighting equipment												
Lose connection	Body not earthed properly	5	2	1	0	10	Proper tighten.												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR CONTROL ROOM

Job Title: **Control Room** **Operation, Control Panel Maintenance, Test, Troubleshooting**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Operation/Cleaning/ Wiring/ Continuity test/ functionality test/ troubleshooting.	LV AC shock	Hand gloves, safety shoes, helmet. Insulated tools.	N	2	2	5	3	0	60									
	220 or 110 VDC shock		N	2	1	3	5	0	30									
	Short Ckt.		N	2	1	4	2	0	16									
	Burning from Electric heater		N	2	1	1	2	0	4									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									
Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (ISOLATOR)

Area/Facility Title: Switch yard (**Isolator)**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency maintenance	Fall from height	3	5	3	0	45	Safety belt, safety shoes, helmet, proper use of ladder.												
	High Voltage shock	3	5	3	0	45	Proper grounding, hang gloves, safety belt, safety shoes, helmet, ladder												
	Porcelain Blast	1	5	5	0	25	Safety shoes, helmet												
	Bird or squirrel or snake	4	2	4	0	32	Inspection, horn, air gun, regular cleaning of grasses & bushes												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (ISOLATOR)

Job Title: **Switch Yard (Isolator)** **Emergency or Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening / Isolator changing	Stress	Hang gloves, safety belt, safety shoes, helmet, ladder, proper tools & tackle chain ton.	Y	4	2	3	3	0	72									
	Fall down from height.		Y	2	1	4	4	0	32									
	P.T charge		Y	5	1	5	2	0	50									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet, hot stick.	Y	1	2	3	3	0	18									
Measuring Insulation, Contact resistance.	LV shock	Hand gloves safety belt, safety shoes, helmet, grounding,	Y	2	1	4	3	0	24									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR LIGHTENING ARRESTOR

Area/Facility Title: Switch yard (**Lightning Arrestor)**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency maintenance.	Fall from height	3	5	4	0	60	Safety belt, safety shoes, helmet, ladder.												
	High Voltage shock	3	5	4	0	60	Proper grounding, hang gloves, safety belt, safety shoes, helmet, ladder												
	Porcelain Blast	1	5	5	0	25	Safety shoes, helmet												
	Bird or squirrel or snake	4	2	4	0	32	Inspection, horn, air gun, regular cleaning of grasses and bushes.												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR LIGHTENING ARRESTOR

Job Title: **Switch yard (Lightning Arrestor)** **Emergency or Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening /L.A changing	Stress	Hang gloves, safety belt, safety shoes, helmet, ladder, proper tools & tackle chain ton.	Y	4	2	3	3	0	72									
	Fall down from height.		Y	2	1	4	4	0	32									
	L.A charge		Y	5	1	5	2	0	50									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet, hot stick.	Y	1	2	2	3	0	12									
Measuring Insulation	LV shock	Hand gloves safety belt, safety shoes, helmet, grounding,	Y	2	1	4	3	0	24									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (POTENTIAL TRANSFORMER)

Area/Facility Title: **Switch yard (Potential Transformer)**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & Emergency maintenance.	Fall from height	3	5	4	0	60	Hang gloves, safety belt, safety shoes, helmet, ladder.												
	High Voltage shock	3	5	4	0	60	Proper grounding, hang gloves, safety belt, safety shoes, helmet, ladder												
	Porcelain Blast	1	5	5	0	25	Safety shoes, helmet												
	Bird or squirrel or snake	4	2	4	0	32	Inspection, horn, air gun, regular cleaning of grasses and bushes												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												

Further Description of Controls Added to Reduce Risk:

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (POTENTIAL TRANSFORMER)

Job Title: **Switch yard (Potential Transformer)** **Emergency or Schedule maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Nut bolt tightening /P.T changing	Stress	Hang gloves, safety belt, safety shoes, helmet, ladder, proper tools & tackle chain ton.	Y	4	2	3	3	0	72									
	Fall down from height.		Y	2	1	4	4	0	32									
	P.T charge		Y	5	1	5	2	0	50									
During grounding led connection.	Voltage induction	Hand gloves safety belt, safety shoes, helmet, hot stick.	Y	1	2	3	3	0	18									
Measuring Insulation	LV shock	Hand gloves safety belt, safety shoes, helmet, grounding,	Y	2	1	4	4	0	32									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SWITCH YARD (POWER TRANSFORMER)

Area/Facility Title: **Switch Yard (Power Transformer)**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule & emergency maintenance	HV shock	2	5	3	0	30	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder. Safe distance from live parts.												
	LV shock	2	5	3	0	30													
	Fall down from height	5	4	3	0	60	Hand gloves, safety shoes, safety belt. Helmet. Ladder												
	HV shock	2	5	3	0	30	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder. Safe distance from live parts.												
Transformer oil	High temperature due to short circuitcan can cause explosion	4	4	4	0	64	Cooling fan, protection system, oil schedule check.												

(cond.)

Transformer breather box	Presence of humidity in the air breather can cause explosion	1	2	3	0	6	Monitoring												
CT , PT,LA body	Burst & human injury	1	2	3	0	6	Regular checked any abnormality												
Switch Yard equipment	Electrocution	4	5	4	0	80	Follow safety sign, Use appropriate PPE, proper earthing.												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SWITCH YARD (POWER TRANSFORMER)

Job Title: **Switch Yard (Power Transformer)** **Power Transformer Schedule & Emergency Maintenance**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ Tightening	Spillage	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder	Y	4	2	3	3	0	72									
	Electrical shock		Y	2	2	3	3	0	36									
	Short circuit		Y	4	2	2	3	0	48									
Insulation measurement	Electrical shock	Hand gloves, safety shoes, safety belt. Helmet. Proper grounding.	Y	2	2	3	3	0	48									
	Short circuit		N	2	2	2	4	0	24									
Testing (O.C, S.C, Tan-delta, SFRA, Winding resistance etc.)	Electrical shock	Hand gloves, safety shoes, safety belt. Helmet. Proper grounding	Y	2	2	2	3	0	24									
	Short circuit		N	2	2	2	4	0	24									
Inspection	Suffocation	Proper ventilation	y	1	1	5	5	0	25									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR RELAY PANEL

Area/Facility Title: **Relay Panel**	Point Value → Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Maintenance, testing & troubleshooting	Compact area	1	3	3	0	9	Proper isolation & grounding, hand gloves, safety shoes, Safety belt. helmet. Safe distance from live parts												
	LV AC shock	1	2	5	0	10													
	DC shock	1	4	3	0	12													
	HV open CT shock	1	5	3	0	15													
	Electrical heater	1	1	3	0	3													
	Body not earthed properly	5	2	1	0	10													
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												

Further Description of Controls Added to Reduce Risk:

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR RELAY PANEL

Job Title: **Relay Panel** **Maintenance/ Test/ Troubleshooting**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ wiring/ continuity test/ relay functionality test.	HV open ct shock	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Safe distance from live parts	N	2	1	5	2	0	20									
	LV ac shock		N	2	1	2	5	0	20									
	Dc shock		N	2	1	4	2	0	16									
	Burning from heater		N	2	1	1	2	0	4									
	Pinching		N	2	1	1	2	0	4									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									
Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR SF6 GAS FILLING

Area/Facility Title: Switch yard (**SF6 Gas Filling in C.B)**																		
							Point Value → Parameter ↓		1		2		3		4		5	
							Occupancy Or Use		≤once/year		≤once/month		≤once/week		≤once/day		≤once/shift	
							Severity		First Aid Only		Medical Treatment		Lost Time		Partial Disability		Death or Permanent Disability	
							Likelihood		Very Unlikely		Unlikely		Possible		Probable		Multiple	
		Before Controls						After Initial Controls						After Additional Controls				
Item or activity	Hazard (s)	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	Initial Controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Gas filling	High pressure gas	3	3	4	0	36	Hand gloves, musk, safety shoes, safety belt, helmet. Maintain proper instructions												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR SF6 GAS FILLING

Job Title: Switch yard (**SF6 Gas Filling in C.B)**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job step/task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Rolling gas cylinder from trolley	Cylinder fall down	Hand gloves, musk, safety shoes, safety belt, helmet, careful carrying	Y	3	3	3	2	0	54									
Gas filling	Gas leakage		N	2	2	4	2	0	32									
	Leakage of gas pipe		Y	2	2	3	2	0	24									
Without regulator filling	Over charge		Y	3	3	4	1	0	36									
During opening & tithing nozzle.	Man fall down from height.	Hand gloves, safety shoes, safety belt, helmet.	Y	2	2	4	3	0	48									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR TRANSMISSION LINE

Area/Facility Title: **Transmission Line**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy a	Severity b	Likelihood c	Legal exposure	Risk* (axbxc)+e	Initial controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Schedule and emergency maintenance	Hv shock	2	5	4	0	40	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Proper use of ladder. Safe distance from live parts.												
	Fall down from height	1	5	4	0	20	Safety belt. Helmet. Proper use of ladder												
Overhead Lines	Contact with or near approach to a live high voltage	5	4	4	0	80	Use proper PPE, maintain safe distance												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR TRANSMISSION LINE

Job Title: **Transmission Line Schedule & Emergency Maintenance**	Point Value → / Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Cleaning/ tightening/ nut bolt changing,	Stressors	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder	Y	2	2	3	3	0	36									
	Fall down from height		Y	2	1	5	4	0	40									
Changing disc insulator. Tower angle replacement	Stressors		Y	2	2	2	3	0	24									
	Fall down from height		N	2	2	3	4	0	48									
Row or tree trimming.	Stressors	Proper isolation & grounding, hand gloves, safety shoes, safety belt. Helmet. Ladder, saw, rough, hot stick	Y	4	2	4	2	0	64									
	Fall down from height		Y	4	2	4	2	0	64									
	Hv shock		Y	2	2	5	3	0	60									
Use of electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

(Contd.)

Use of Metallic Tapes and Other Conductive Equipment	Electrocution or injury	Metallic tapes & conductive equipment shall avoid where applicable, use of proper PPE	N	2	3	3	3	0	54									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR FIRE FIGHTING SYSTEM

Area/Facility Title: **Fire Fighting System**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy a	Severity b	Likelihood c	Legal exposure	Risk* (axbxc)+e	Initial controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Fire Fighting system	Fire	2	2	2	0	8	PPE & proper safety instruction												
Portable ABC Dry Powder	Pressurized Cylinder	1	1	2	0	2	Protection as per Safety instruction												
Portable CO2 Extinguisher	Pressurized Cylinder	1	1	2	0	2	Protection as per Safety instruction												
DCP Extinguisher	Pressurized Cylinder	1	1	2	0	2	Protection as per Safety instruction												
Portable Dry Powder	Pressurized Cylinder	1	1	2	0	2	Protection as per Safety instruction												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR FIRE FIGHTING SYSTEM

Job Title: **Fire fighting system**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Use of fire extinguisher	High pressure gas	Follow instructions carefully	Y	3	1	2	2	0	12									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR OFFICE

Area/Facility Title: **Office**	Point Value → / Parameter ↓	1	2	3	4	5
	Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy a	Severity b	Likelihood c	Legal exposure	Risk* (axbxc)+e	Initial controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Office	Posture, Eyestrain	5	1	4	0	20	Protection as per Safety instruction												
Computer, Printer	Posture, Eyestrain	5	1	4	0	20	Protection as per Safety instruction												
computer	electricity, radiation	5	1	4	0	20	Protection as per Safety instruction												
Toilets	Human Waste	2	2	3	0	12	Clean & disposal												
Electric heater	Fire, Electric shock	5	1	4	0	20	Maintain safety cautions												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR OFFICE

Job Title: Office	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Improper sitting	Back pain	Follow ergonomics	Y	4	5	1	3	0	60									
Use of computer	Eye strain, Headache	Follow ergonomics	Y	4	5	1	3	0	60									
Use of electric heater	Fire, Electric shock	Maintain safety cautions	Y	1	5	1	3	0	15									
Use of other electrical equipment	Fire, Electric shock	Maintain safety cautions	Y	1	5	1	3	0	15									
Use of other electrical appliances	Electrocution or injury	All damaged electrical appliances shall be removed from service, use proper PPE	N	2	4	2	3	0	48									

Further Description of Controls Added to Reduce Risk:

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.

POWER GRID COMPANY OF BANGLADESH LTD.

FACILITY RISK ASSESSMENT FOR STORAGE

Area/Facility Title: **Storage**							Point Value → / Parameter ↓	1	2	3	4	5
							Occupancy Or Use	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
							Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
							Likelihood	Very Unlikely	Unlikely	Possible	Probable	Multiple

		Before Controls						After Initial Controls						After Additional Controls					
Item or activity	Hazard (s)	Occupancy a	Severity b	Likelihood c	Legal exposure	Risk* (axbxc)+e	Initial controls	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk = (AxBxC)+E	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Legal Exposure	Risk* (AxBxC)+E	% Risk Reduction
Hazardous material storage	Trimming & fall	4	1	3	0	12	Use of PPE												
Lube Oil Storage	Oil Spill and leakage	3	1	4	0	12	Use of PPE												
Waste materials storage	Trimming & fall	4	1	3	0	12	Use of PPE												
Further Description of Controls Added to Reduce Risk:																			

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

POWER GRID COMPANY OF BANGLADESH LTD.

JOB RISK ASSESSMENT FOR STORAGE

Job Title: **Storage**	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/day	≤once/shift
	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple

			Before Additional Controls								After Additional Controls							
Job Step/Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Legal Exposure	Risk* (AxBxCxD)+E	% Risk Reduction
Walking	Tripping	Sufficient light, Maintain safety cautions	N	2	4	1	4	0	16									
Picking any material	Falling	Maintain safety cautions, Use of PPE	N	2	4	1	4	0	16									
Further Description of Controls Added to Reduce Risk:																		

*Risk	0 to20	21 to40	41 to60	61 to80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

Each hazard should occupy one line in the risk table. That is, the risk from each hazard is to be assessed individually. A single activity must be entered three times in the table since there are three hazards associated with this activity.

Note: For legal exposure, the value should be either 5 for identified legal requirements or 0 for no such requirements could be identified.