

Regulations Governing Supervision Service Operation for Prevention and Mitigation of Disasters of Construction Sites During the Flood Period for Public Works of the Construction and Planning Agency of the Ministry of the Interior

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Note: The translation version is intended for reference only. If any inconsistency between Chinese and English version is found, the Chinese version shall govern.

1. This regulation is formulated basing on item 20 of The Main Points For Prevention and Mitigation of Disasters During the Flood Period for Public Works drawn up by the Public Works Committee of the Executive Yuan. Supervision service operation of construction site disaster prevention shall follow this regulation unless there are laws and decrees that stipulate otherwise.
2. Definitions for flood period, typhoon and heavy rainfall are as follows:
 - 2.1 Flood period: From May 1 to November 30 every year in accordance with the Rivers Management Regulations.
 - 2.2 Typhoon: Sea and land typhoon warning issued by the Central Weather Bureau for regions of construction sites.
 - 2.3 Heavy rainfall: Special report on heavy rainfall released for regions of construction sites by the Central Weather Bureau.
3. Supervision companies shall set up a monitoring mechanism for disaster prevention of construction sites for public works during the flood period and be included as a link of the government disaster prevention system and its implementation structure is as follows:
 - 3.1 Formulate relevant disaster prevention and rescue supervision plan in consideration of the special characteristics, scale and construction site organization of constructions, and in accordance with the Disaster Prevention and Rescue Regulations and the Basic Plan for Disaster Prevention and Rescue to supervise the construction companies to set up disaster prevention and rescue organizations.

- 3.2 The construction supervision plan calls the construction companies to follow provisions of the construction contract to include construction safety responsibilities and relevant disaster prevention measures during the flood period in the construction plan in accordance with the special characteristics of construction and risk of disasters during the flood period, and supervise the construction companies to implement at construction sites via the system of Public Works Construction Quality Management and Labor Safety and Health Management.
 - 3.3 For construction during the flood period it is necessary to supervise the construction companies to activate the construction site disaster prevention mechanism and carry out disaster prevention and mitigation; and in the event of disasters, follow the command and allocation of the government disaster prevention and rescue organizations, aside from requiring the construction companies to carry out self-rescue.
 - 3.4 In judging major disaster at the construction site or epidemic disasters that self-rescue is inadequate, it is necessary to immediately solicit government support and assistance in accordance with the disaster prevention and rescue system to prevent expansion of disaster or causing a second disaster.
4. Supervision companies regarding construction site with the risk of disaster during the flood period and oversee that they include relevant disaster prevention measures in their construction plan. Aside from relevant regulations of the government, the main points are as follows:
 - 4.1 Fully take into consideration the possible effect of typhoon and heavy rainfall on the construction site during the flood period, and rationally arrange the sequence and progress of construction and properly draft contingency response and disaster prevention measures.
 - 4.2 Formulate self-checklist for construction site disaster prevention during the flood period (reference the format and examples as per attached chart) and the inspection and filling frequency should be at least once a month during the flood period; and shall immediately inspect and fill the checklist at typhoon warning for regions of construction sites or special report on heavy rainfall by the Central Weather Bureau.

4.3 River banks with concern of bursting or flooding should have relevant tasks and operation stipulations for flood prevention and bank bursting. Procurement of construction projects above a certain examination amount should require companies to propose a complete breakdown of construction plan items by items (such as excavation and restoration construction) or flood prevention response plan.

For engineering construction that require to apply for examination of the river management authorities, the supervision companies should accurately review the construction companies' construction plan or flood prevention response plan and note that they have included items and contents as required by the river management authorities.

5. The supervision companies should oversee the construction companies with regard to the handling procedure and forms for emergency accidents of construction sites and notification of disasters, and set up a liaison window for solicitation of government or relevant disaster prevention and rescue organizations for support and assistance of major disasters at the construction site, solicit assistance of the local government to notify and help with evacuation of the people in the vicinity so as to facilitate notification, pre-warning and handling operation of construction site disasters during the flood period.
6. Before advent of the flood period every year, the supervision companies should cooperate with the government and construction companies with sponsoring of disaster prevention propaganda, seminar or education for various construction workers and carry out exercise and preparation for the various disaster prevention and rescue plan and flood response plan and oversee companies to take following actions:
 - 6.1 In view of evaluation of the hidden risk and scope of influence of disasters in work areas respective to the construction circumstances, review and adjust the scale of organization to be responded by the construction site, salvaging and repair and operation capabilities, and if necessary should set up open contract associate companies for support and assistance or coordinate with the neighboring construction site companies for mutual support and rescue.
 - 6.2 Inspect the gaps for flood prevention in the construction areas in an all-round way and ready and place the plugging materials and machinery and tools such

as sand bags, mobile water pump, emergency power and lighting, etc. and plan for contingency measures for the sealing of flood prevention gaps in the event of bursting and collapse during the typhoon and heavy rainfall period.

- 6.3 Set up checklist for construction site disaster prevention resources including personnel, machinery, tools, materials, telecommunication equipment and first-aid, the quantity and allocation places, and carry out repair and maintenance of the relevant disaster prevention and rescue equipment.
- 6.4 Have hydrological and flood prevention and drainage system information of the construction site surrounding areas on hand and properly plan and set up appropriate drainage trenches, water retention trenches, sand sedimentation pools, energy-dissipating pools, flood retardation pools and slope land water conservation facilities.
- 6.5 Enable all construction workers understand the route, place and method of evacuation, risk evasion and disaster prevention and rescue, and set up noticeable caution, warning signs and control entry/exit and isolation of the people and other measures.
- 6.6 For continuation projects of flood period construction spanning the years, it is necessary to review and revise and report for approval to match the realities in accordance with the construction plan with respects disaster prevention and flood prevention response plan during the flood period pursuant to the current construction circumstances.

With regard to foregoing disaster prevention propaganda, seminar or education and exercise work, the supervision companies should request the government to carry out concentrated or regional processing in terms of construction categories and similar characteristics for engineering procurement of projects not reaching the amount for examination.

7. During the flood period the supervision companies should adopt following coordinative measures:
 - 7.1 Supervision companies to regularly check, inspect and update information for centralized allocation and support whenever required.
 - 7.2 Supervise the construction companies to include construction site disaster prevention mechanism and disaster prevention and rescue propaganda work in

the construction site management and safety and health and relevant operations for continued processing, and pay attention to work items that affect safety of construction operation by wind and rain and timely stop part or all operations.

- 7.3 Supervise companies to accurately inspect, fill and report the self-checklist for construction site disaster prevention during the flood period and submit to the supervisory unit and government for reference and handling. If shortcomings are found during sampling inspections, it is necessary to require companies to swiftly make improvement and track till completion of improvement.
- 7.4 Step up inspection of the surrounding environment of the construction sites in view of external factors that could impact on the safety of construction sites during typhoon and heavy rainfall such as sediment accumulation or obstruction of the drainage system outside the construction area, falling or trimming of trees, slanting of electric poles and damaging of large advertising boards, and issues of construction interfaces with the neighboring government engineering or pipeline units, and should notify the competent authorities to assist and coordinate the relevant competent organizations to make swift rectification.
- 7.5 As regards construction of reservoirs, rivers and river basins, it is necessary to step up liaison with relevant management units to understand the precipitation, water level and mudslide of the upstream and the water catchment area and require companies to have dedicated personnel for alert, and ready on-site telecommunication, signal, escape and rescue equipment to facilitate timely evacuation. The excavated earth and gravel should be heaped up and timely transported to avoid blocking the waterways.
- 7.6 Supervise the construction companies to pay attention to whether the earth bank or earth filling projects of road engineering have obstructed local drainage or whether the temporary support of cross-river structures would affect the cross-section of floods and other issues.

8. The supervision companies should require all construction workers of construction sites to pay attention to typhoon, heavy rainfall and other weather information at all time, and supervise the construction companies to properly implement the following disaster prevention work before the coming of typhoon and heavy rainfall:
 - 8.1 It is necessary to further fasten the construction fences, supporting racks, scaffolds, protective nets, advertising signboards and other temporary structures; and should dismantle in advance if such structures are located in densely populated areas and evaluated to be difficult to ensure safety of the installations in order to prevent collapsing and falling incidents.
 - 8.2 The drainage facilities of the work areas and the surrounding areas should be cleaned to ensure smooth flowing of water and normal connection function of the entire drainage system.
 - 8.3 Cranes and other large hoisting mechanical equipment should be properly fastened and anchored to make them stable, and if necessary remove them to safe areas.
 - 8.4 For foundation and work well excavation, earth and gravel filling, slope land water conservation facilities, it is necessary to carry out inspection and monitoring and improve the relevant safety and protective measures.
 - 8.5 Step up observation of the water level, flow rate and turbidity of neighboring underground water, rivers and streams and other hydrological information, and changes in the slope side, mud and rock, woodland and constructional structures on the slope land and timely stop construction and carry out evacuation.
 - 8.6 All gaps in flood prevention should be properly sealed with sandbags, water-stopping steel plates and water-stopping walls and reinforce other temporary flood-prevention facilities. For hidden flood-prone work areas which require safety protection, it is necessary to get water pumps and water-stopping materials ready.

- 8.7 Clean garbage, miscellaneous articles and disposables.
 - 8.8 Construction materials, machinery, equipment and hazardous articles should be placed in safe areas and properly fastened, and earth and gravel should be properly heaped up and covered to avoid collapse or down shifting.
 - 8.9 The power system should be further fastened, prevent water and improve protection. Power supply to construction site should be cut off except for lighting, drainage and rescue in order to avoid electric shock.
 - 8.10 Beef up disaster prevention and safety measures of construction site premises, office and warehouse in resisting wind, rain, flood, thunder strike and collapsing.
 - 8.11 For handling of item 1 to item 10, companies should fill out and verify in self-checklist for disaster prevention of construction sites during the flood period.
 - 8.12 Upon completion of work of item 2 and item 6, it is necessary to supervise companies to take pictures as record and if necessary invite the local village and neighborhood chiefs for on-site confirmation so as to clarify responsibilities for disasters caused by typhoon and heavy rainfall.
9. Throughout the course of battering by typhoon and heavy rainfall, the supervision companies should coordinate the authorities and supervise the construction companies to swiftly handle and notify the following:
- 9.1 Make sure the response, rescue and repair organizations and relevant materials and machinery are ready on site and in normal operation.
 - 9.2 Have disasters of the construction site and surrounding areas under control at all time, and in emergency disposition and notify the disaster and solicit assistance.
 - 9.3 For people in the neighboring areas possibly affected by disaster of construction site, it is necessary to give early warning and assist to liaise with the authorities and solicit the local government to assist with notification and evacuation of the people.

10. For subsequent construction, the supervision companies should pay attention to following in the wake of typhoon and heavy rainfall:
 - 10.1 Supervise the construction companies to carry out all-round cleaning and detail inspection of all areas, links and all power installations, pipelines to ensure safety before continue with construction.
 - 10.2 With regard to afore-mentioned inspection work, it is necessary to pay attention to whether the just poured concrete quality is being affected by disturbance in support and mold plate, whether the soil at the bottom of support for construction structures is too soft, whether the piles of bridges been washed and exposed, and whether the foundation under water is sunken and other issues.
 - 10.3 In the event of disaster and damage, it is necessary to supervise the construction companies to swiftly complete salvaging or repairing work, and follow procedures stipulated in the relevant disaster prevention and rescue plan for subsequent restoration construction.
11. Construction operation and safety work items affected by the flood period such as the lower structure of bridges and construction structures of flood dike plan under the flood level, relocation or reconstruction of drainage water tanks and water tunnels should be supervised to complete construction before arrival of the flood period, and if construction spans the flood period, it is necessary to require the construction companies to rush construction during good weather days.
12. Referring to items 8 and 9 about supervision companies overseeing the construction companies for carrying out self-inspection operation for prevention of disaster in construction site during the flood period, the authorities should pursue relevant responsibilities of the supervision companies in accordance with the contract for failing to genuinely supervise work, inaccurate filling of information or failure to complete improvement required by sampling inspection and caused serious damage to the construction site.

13. The supervision companies and its dispatched on site personnel should genuinely oversee that the construction companies should practical disaster prevention work for construction site during the flood period and carry out sampling inspection of self-inspection operation for disaster prevention of construction sites by the construction companies during the flood period. If shortcomings are found it is necessary to immediately notify the construction companies to make improvement within a specified period and ascertain the improvement results.
14. At the end of the flood period every year the supervision companies should review the overall operation performance of the disaster prevention mechanism of construction sites by construction companies during the flood period regarding uncompleted and continued construction projects in the flood period of the following year, and draft practical improvement measures and submit to the authorities for examination.
15. The supervision companies should oversee the construction companies to revise the construction plan and flood prevention response plan on the basis of preceding review results and make relevant recommendations for relevant disaster prevention and rescue plan for examination by the authorities.
16. The supervision companies should intensify supervision of the construction companies with regard to carrying out the construction of disaster prevent work during the flood period, and boost alert during arrival of typhoon and heavy rainfall, firmly in grasp of the circumstances and timely response to avoid disasters and oversee that they are not in violation of relevant regulations.