Regarding Receipt of Report Submitted in Response to Directions on Inspections and Other Actions Pertaining to Protection Device of Transmission Lines at Substations

June 8, 2011
Nuclear and Industrial Safety Agency

On May 16, 2011, Nuclear and Industrial Safety Agency (hereafter, “NISA”) received a report from Tohoku Electric Power that the malfunction of protection device(s) in one location of the 270,000V transmission line at the time of multiple and quasi-simultaneous shorting and grounding accidents induced by tremors was one of the main reasons that led to the extensive blackout following the earthquake off the coast of Miyagi prefecture on April 7, 2011.

In response, NISA directed the respective General Electric Utility to carry out inspections among other actions of protection devices based on 2011.05.16 NA No4. dated May 17, 2011.

NISA received the following report from the respective General Electric Utility today.

I. Report from General Electric Utility

The subject of investigations by the General Electric Utility is protection devices at substations and switching stations that connect to transmission lines running from nuclear power stations and reprocessing facilities as well as protection devices that connect to transmission lines that make up the bulk power system. The investigation considered whether such a situation is possible as that the indicator showing the state of the protection device does not function (hereafter called, “state of non-indication”), despite loss of the circuit breaker function in relation to the electrical current affected by the accident.

Regarding the results of the investigations, 2 (two) operators reported on devices that fall under the above situation, as well as countermeasures as follows. For General Electric Utility and such other than the ones listed
below, it was reported that there are no devices that fall under the above situation. The 2 (two) aforementioned operators have reported that they will ensure that the state of non-indication does not occur through periodic monitoring and other actions until permanent measures are instituted.

<table>
<thead>
<tr>
<th>Name of operator</th>
<th>Number of devices where a state of non-indication is likely to occur / number of devices subject to investigation</th>
<th>Actions (permanent measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tohoku Electric</td>
<td>138 devices / 264 devices</td>
<td>Planned modification of circuits by the end of FY 2012. However, some devices such as the 500,000V system will be modified during 2011.</td>
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<tr>
<td>Kyushu Electric</td>
<td>2 devices / 381 devices</td>
<td>Planned modification of circuits by the end of FY 2011. Detailed schedule will be adjusted on account of permissible timeline for devices to go offline.</td>
</tr>
</tbody>
</table>

II. NISA actions

NISA confirmed the contents of the reports from the respective General Electric Utility. NISA will follow-up on implementation regarding permanent measures reported by 2 (two) operators that own devices where a state of non-indication is likely to occur.

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