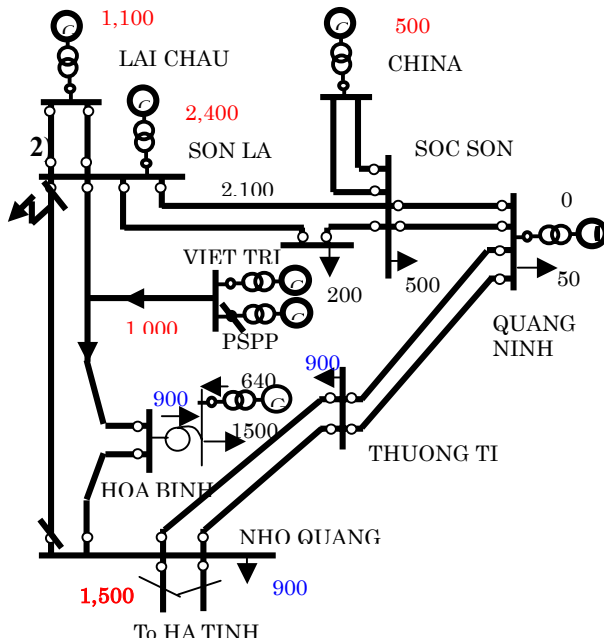


## 添付資料 6-2

### 揚水発電所の送電方法の検討結果

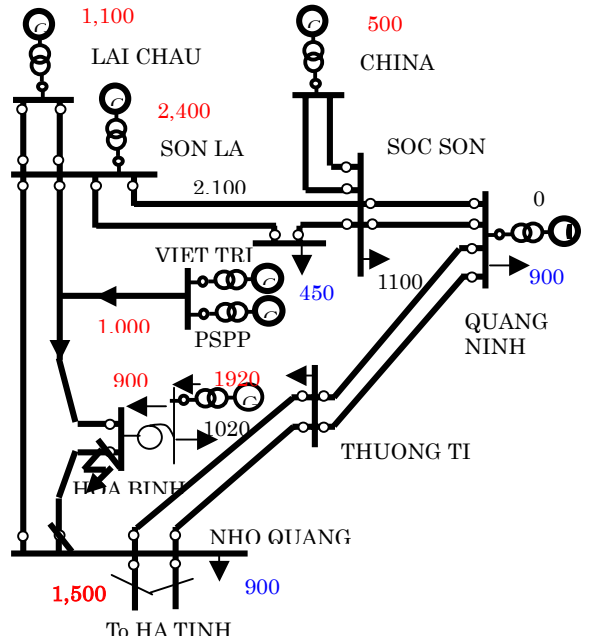
**Contents of the study of methods of power transmission of PSPP**

**1) Single circuit T-off from the section between Son La and Hoa Binh**



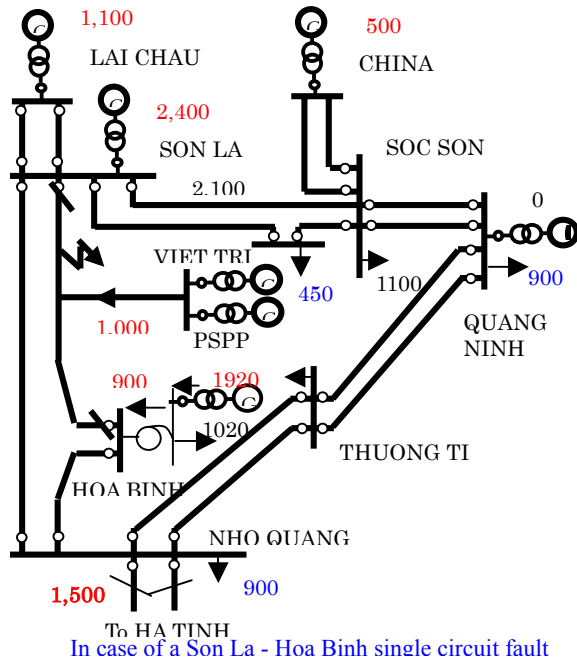
In case of a Son La - Nho Quang single circuit fault

Stability	Unstable with generator stepping out Stable <b>after remote generator shedding</b> of 500MW PSPP
Power flow	Less than thermal capacity <b>after remote generator shedding</b> of 500 MW of PSPP



In case of a Hoa Binh - Nho Quang single circuit fault

Stability	Unstable with generator stepping out Stable <b>after remote generator shedding</b> of 750MW PSPP
Power flow	Less than thermal capacity <b>after remote generator shedding</b> of 750 MW of PSPP

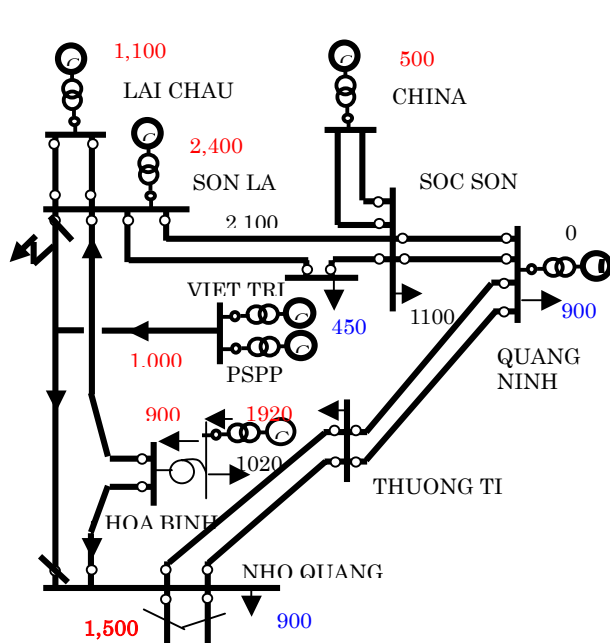


In case of a Son La - Hoa Binh single circuit fault

Stability	Stable after dropping of 1,000 MW of PSPP
Power flow	Less than thermal capacity after dropping of 1,000 MW of PSPP

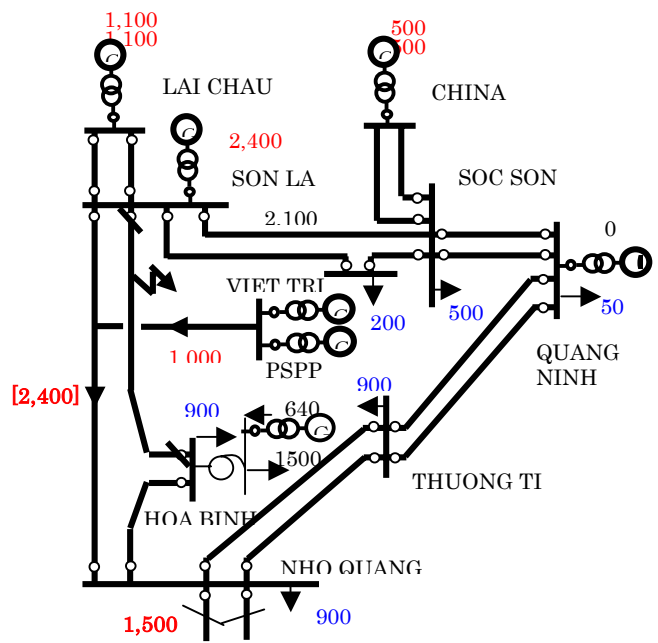
These cases do not meet the criteria because there is a need for remote generator shedding (200 ms) to maintain stability.

2) **Single circuit T-off from the section between Son La and Nho Quang**



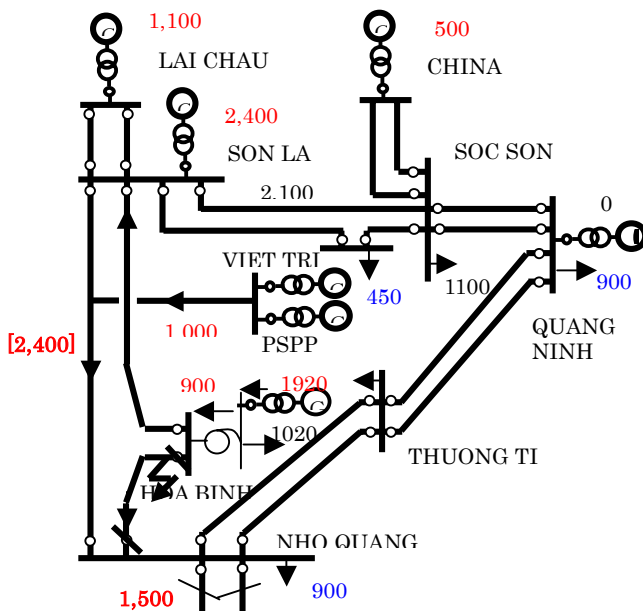
In case of a Son La - Nho Quang single circuit fault

Stability	Stable after dropping of 1,000 MW of PSPP
Power flow	Less than thermal capacity after dropping of 1,000 MW of PSPP



In case of a Son La – Hoa Binh single circuit fault

Stability	Stable
Power flow	More than thermal capacity between T-off point and Nho Quang Less than thermal capacity after depression of output of PSPP by 250 MW

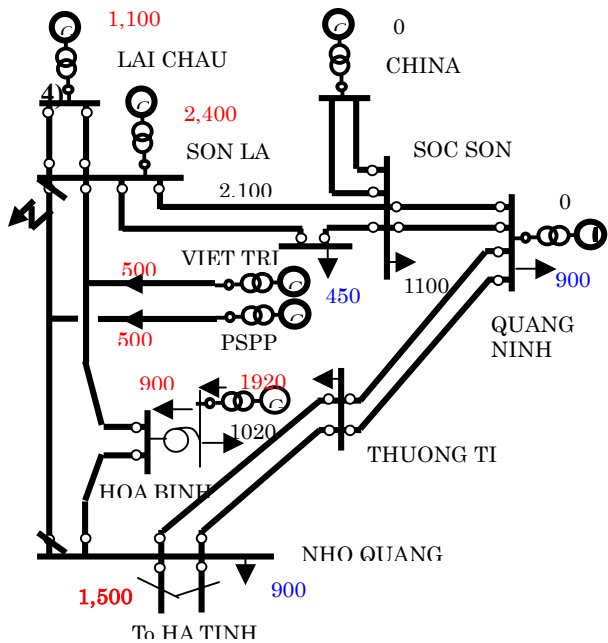


In case of a Hoa Binh - Nho Quang single circuit fault

Stability	Stable
Power flow	More than thermal capacity between a switching station and Nho Quang Less than thermal capacity after depression of output of PSPP by 250 MW

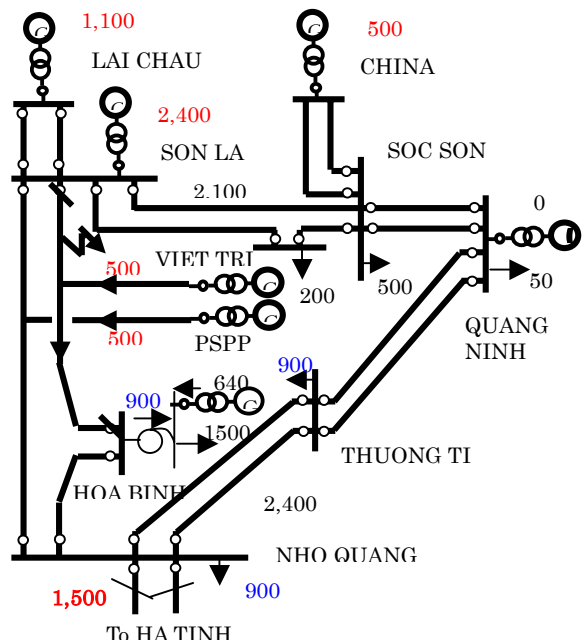
These cases meet the criteria, if a dropping of 1,000 MW causes a frequency changes less than 1Hz.

### 3) Unit transmission lines with double circuits



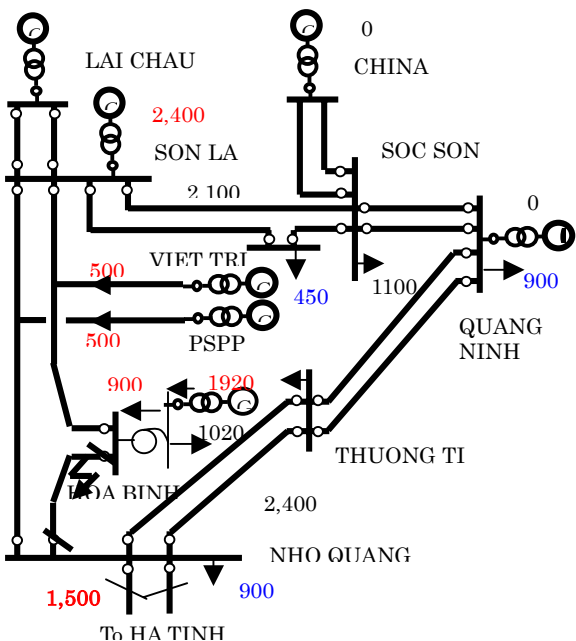
In case of a Son La - Nho Quang single circuit fault

Stability	Stable after dropping of 500 MW of PSPP
Power flow	Less than thermal capacity after dropping of 500 MW of PSPP



In case of a Son La – Hoa Binh single circuit fault

Stability	Stable after dropping of 500 MW of PSPP
Power flow	Less than thermal capacity after dropping of 500 MW of PSPP

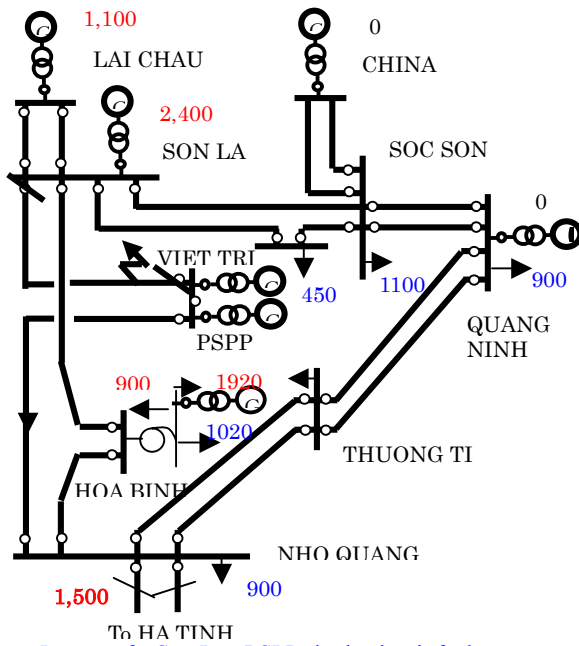


In case of a Hoa Binh – Nho Quang single circuit fault

Stability	Unstable with generator stepping out Stable after remote generator shedding of 250 MW of PSPP
Power flow	Less than thermal capacity after remote generator shedding of 250 MW of PSPP

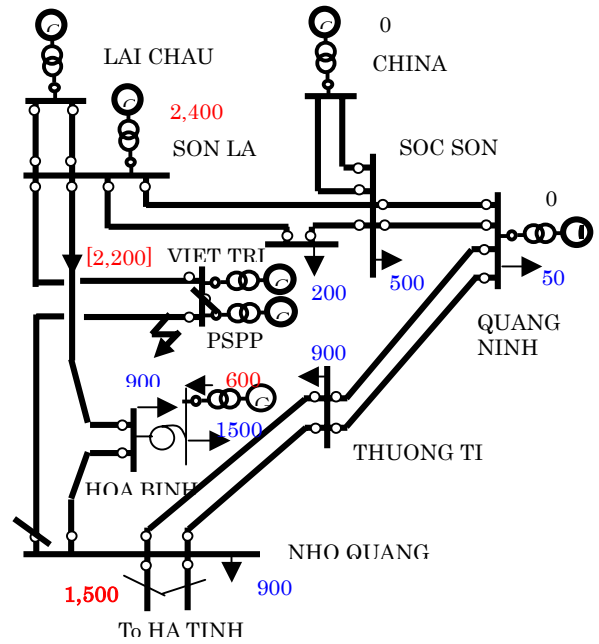
These cases do not meet the criteria because there is a need for remote generator shedding (200 ms) to maintain stability.

4) Son La, Nho Quang, and PSPP connected. Bus bars installed at PSPP



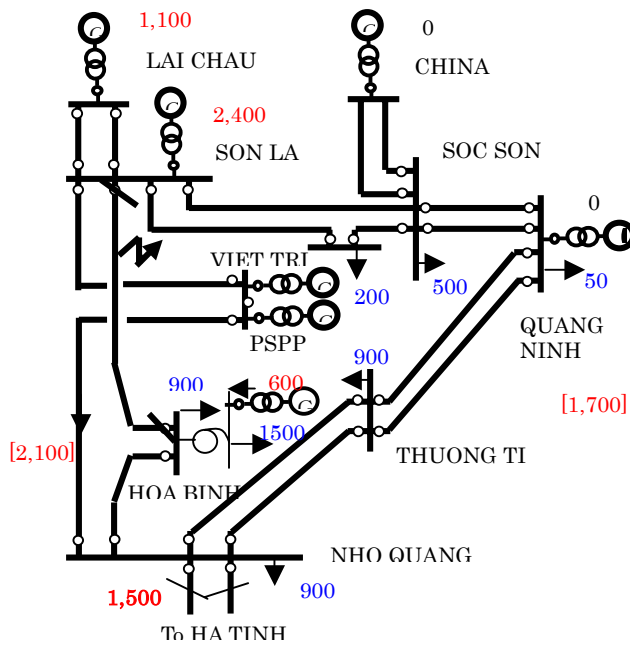
In case of a Son La - PSPP single circuit fault

Stability	Stable
Power flow	Less than thermal capacity



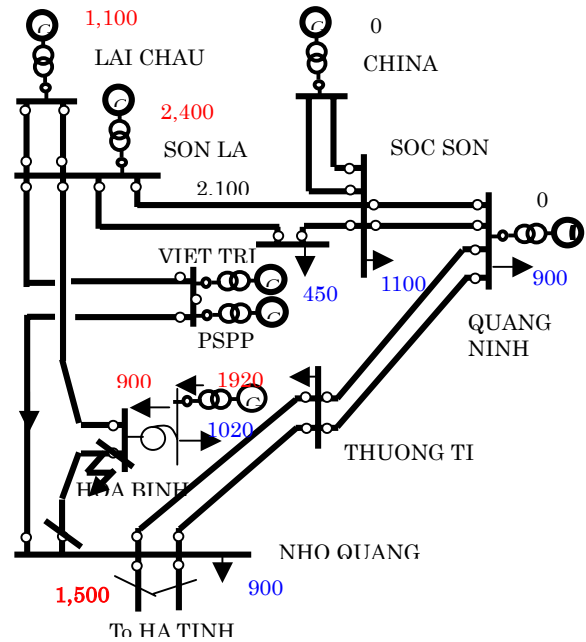
In case of a PSPP - Nho Quang single circuit fault

Stability	Stable after opening a circuit breaker for bus connection and dropping 500 MW of PSPP
Power flow	Less than thermal capacity



In case of a Son La - Hoa Binh single circuit fault

Stability	Stable
Power flow	Less than thermal capacity

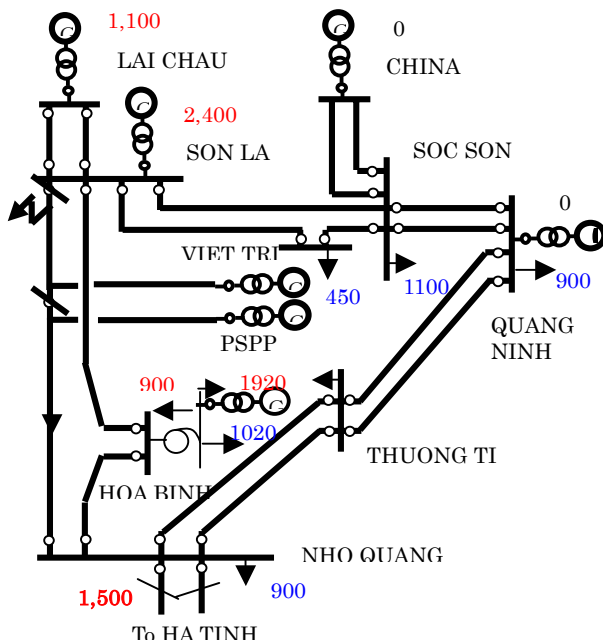


In case of a Hoa Binh - Nho Quang single circuit fault

Stability	Stable
Power flow	Less than thermal capacity

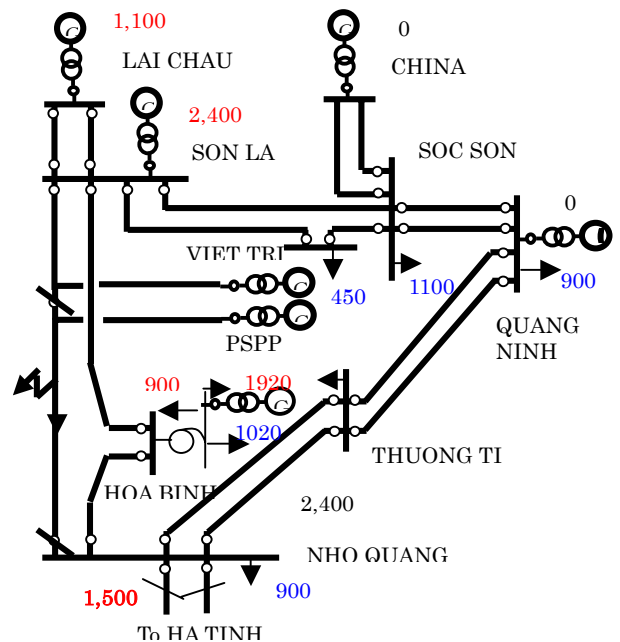
These cases meet the criteria.

5) A switching station installed between Son La and Nho Quang. A T/L from switching station with double circuits.



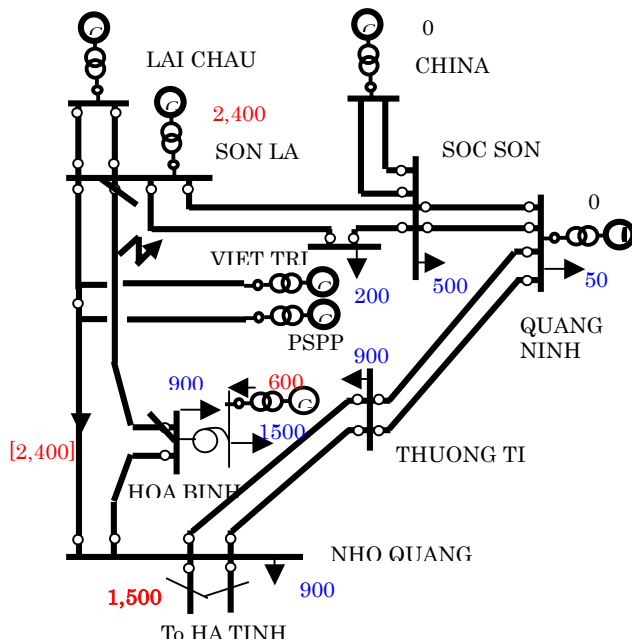
In case of a Son La – T-off point single circuit fault

Stability	Stable after dropping of 500 MW of PSPP
Power flow	Less than thermal capacity after dropping of 500 MW of PSPP



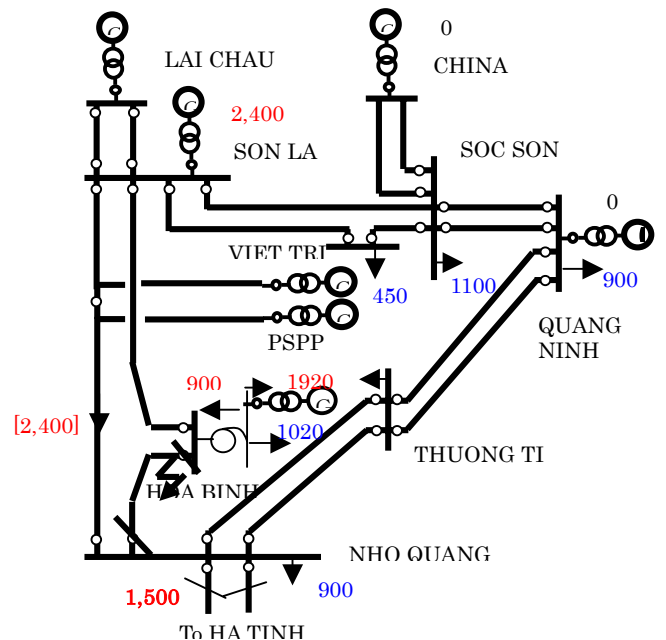
In case of a T-off point – Nho Quang single circuit fault

Stability	Stable after dropping of 500 MW of PSPP
Power flow	Less than thermal capacity after dropping of 500 MW of PSPP



In case of a Son La – Hoa Binh single circuit fault

Stability	Stable
Power flow	More than thermal capacity between a switching station and Nho Quang Less than thermal capacity after depression of output of PSPP by 250 MW



In case of a Hoa Binh – Nho Quang single circuit fault

Stability	Stable
Power flow	More than thermal capacity between a switching station and Nho Quang Less than thermal capacity after depression of output of PSPP by 250 MW

These cases meet the criteria.