



# Deviation Settlement Mechanism

NORTHERN REGIONAL POWER  
COMMITTEE





# Additional Charge due to Sustained Deviation

- Till 31-03-2020 (As per Draft)

## Scenario 1

Time Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
OD/UD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	N	UD	OD	N	N	UD	OD	UD	UD
DSM charge	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23
Violations													V										

## Scenario 2

Time Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
OD/UD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	UD
DSM charge	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	
Violations													V											

- In both cases, Additional Charge = 10% of D13
- No incentive to change sign if one violation has taken place after T13 till T24.



# Additional Charge due to Sustained Deviation

## NRPC Sectt Suggestion

- Additional charge for sustained deviation may be levied for **all time blocks after T12 till sign reversal/change in position takes place.**

### Scenario 1

Time Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
OD/UD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	N	UD	OD	N	N	UD	OD	UD	UD
DSM charge	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23
Violations													V	V									

- Additional charge = 10% of (D13+D14)

### Scenario 2

Time Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
OD/UD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	OD	UD
DSM charge	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23
Violations													V	V	V	V	V	V	V	V	V	V	

- Additional charge = 10% of (D13+D14+D15.....D22)



# Additional Charge due to Sustained Deviation

- After 01-04-2020 (As per Draft)
- Sign reversal/ change in position to take place after 6 time blocks.  
Violation to attract additional charge:

No. of violations in a Day	Additional Charge Payable
From first to fifth violation	For each violation, an additional charge @ 3% of daily base DSM payable / receivable
From sixth to tenth violation	For each violation, an additional charge @ 5% of daily base DSM payable / receivable
From eleventh violation onward	For each violation, an additional charge @ 10% of daily base DSM payable / receivable

- In case Drawing entity **Overdraws** continuously for **first 48** time blocks and then **Underdraws** continuously for **next 48** time blocks in such a way that Net **Base DSM** charge = **zero**, **Sustained Deviation Charges** would be **zero**, despite **14 violations** in a day.



# Additional Charge due to Sustained Deviation

## NRPC Sectt Suggestion

- Number of time blocks in which sign reversal/change in position has to take place is being reduced from 12 to 6 which would make it more stringent.
- Additional charge may not be linked with daily base DSM.
- Additional charge may continue to be **levied at 10% of time block DSM, for all time blocks after T6** till sign reversal/change in position takes place.



# Exemptions for Sustained Deviation

## NRPC Sectt Suggestion

- Objective of DSM regulations :  
*“maintain **grid discipline** and **grid security** as envisaged under grid code **through commercial mechanism** of Deviation settlement”.*
- However, Commercial mechanism of sustained deviation charges **should not force utilities** to act in a manner which is **against grid security**.
- The commercial mechanism should be such that **grid security is not compromised just to achieve sign reversal**.
- Hence, additional charge due to sustained deviation may also be **exempted** in cases where a utility is **UD/OI at frequency below 49.85 Hz** or **OD/UI at frequency above 50.1 Hz** since it is **supporting the grid in those scenarios**
- Sign change would be harmful for the grid as well as lead to imposition of additional deviation charges on the utility



# Exemptions for Sustained Deviation

## NRPC Sectt Suggestion

Frequency	49.92	49.98	50.01	49.93	49.88	49.84	49.79	49.82	49.89	49.95	50.02	49.99	49.98
Time Block	1	2	3	4	5	6	7	8	9	10	11	12	13
OD/UD	OI	OI	OI	OI	OI	OI	OI	OI	OI	OI	N	UI	UI
DSM charge	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
Violations							V	V	V	V			

- If Generator had changed sign from OI to UI in T7 and T8, it would have been harmful for the grid.
- Moreover, additional deviation charges would be levied on the generator for UI below 49.85Hz.
- Generator should not be forced to suffer penalty just to achieve sign reversal. Grid security should prevail over sign reversal.
- Sustained Deviation charges = 10% of (D9+D10)



## Drawal Against Zero Schedule by Generator

- As per the draft regulation, any drawal of power by a generating station for the start-up activities of a unit is exempted from sustained deviation charges. The **duration/quantum of such drawal may be specified** in the regulations.
- When the injection schedule of the generator is zero and it is drawing power from the grid, the generator is behaving like a drawee entity.
- Charges for drawal of power in such cases may be the same as being levied on other drawee entities as per prevailing grid conditions (without sustained deviation charges). No. cap rate should be applicable in case of such drawal.





## Solar/Wind Infirm Power

- Regulation 5(5) of the DSM Regulations specifies the cap rate for infirm power injected by generating stations using different fuel sources.

Fuel	Cap Rate (Rs/kWh)
Domestic coal/ Lignite/ Hydro	1.78
APM gas	2.82 (or rate specified by CERC)
Imported coal	3.03
RLNG	8.00

- The revenue earned by the company from this infirm injection, after accounting for the fuel expenses, is adjusted against the capital cost of the generating station.
- No cap rate/charges have been specified for solar/wind generators.
- The methodology for accounting for infirm generation of these generators may be specified in the regulations.



**THANK YOU..!!!**