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SOP FOR GENERATION OF TROPICAL CYCLONE FORECAST TRACKS

APPROVALS

*All approvals are maintained and controlled in the **[Document Control System]** system.
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REVISION HISTORY

<i>AUTHORS</i>	<i>REVISED SECTION/PARAGRAPH</i>	<i>REV</i>	<i>RELEASED</i>
[Dr. Raghavendra Ashrit Gopal Iyengar and E.N. Rajagopal]	[Initial Release]	[-]	See [Document Control System]

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1. PURPOSE

This document defines the Standard Operating Procedure (SOP) to be followed for Tropical Cyclone (TC) Forecast Tracks.


- 1.1 to monitor the operational forecasts for TC formation*
- 1.2 to generate TC forecast tracks based on NCMRWF global deterministic and ensemble models.*
- 1.3 to generate the Significant Weather Forecast Summary (SWFS) for communicating to ESSO-IMD and MoES officials through e-mail (cwdhq2008@gmail.com, mohapatraimd@gmail.com, secretary@moes.gov.in, swati.basu@nic.in, gopal.iyengar@nic.in, en.rajagopal@nic.in, raghu.ashrit@nic.in, anumeha.dube@nic.in, vivek@ncmrwf.gov.in, munmun@ncmrwf.gov.in, vsprasad@ncmrwf.gov.in, john@ncmrwf.gov.in, ashishroutray@ncmrwf.gov.in, kuldeep@ncmrwf.gov.in, [priti@ncmrwf.gov.in](mailto:pritti@ncmrwf.gov.in), sushant@ncmrwf.gov.in)*

2. SCOPE

- 2.1 NCMRWF designated scientists to monitor the forecasts (Day-10 to Day-7) for possible formation and intensification of any low pressure system.*
- 2.2 Monitor Day-7 to Day-5 forecasts to alert and subsequently to track the system.*
- 2.3 To instruct Facility Management Service (FMS) coordinator to take operational decisions while executing forecast jobs on NCMRWF computing platforms.*
- 2.4 To generate the SWFS for communication to ESSO- IMD and MoES officials through e-mail*

3. DEFINITIONS

- Health of HPC– Availability of all nodes and their communication ports
- Connectivity – National Knowledge Network High bandwidth backbone connectivity
- NGFS - T574L64 global model forecast runs and post processing.
 - NGFSTRK - TC Tracker for NGFS forecasts
- NCUM - N512L70 global model forecast runs and post processing.
 - NCUMTRK - TC Tracker for NCUM forecasts
- NGEFS - T190L28, 20 member ensemble model runs with post processing.
 - NGEFSTRK - TC Tracker for NGEFS forecasts


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4. RESPONSIBILITIES

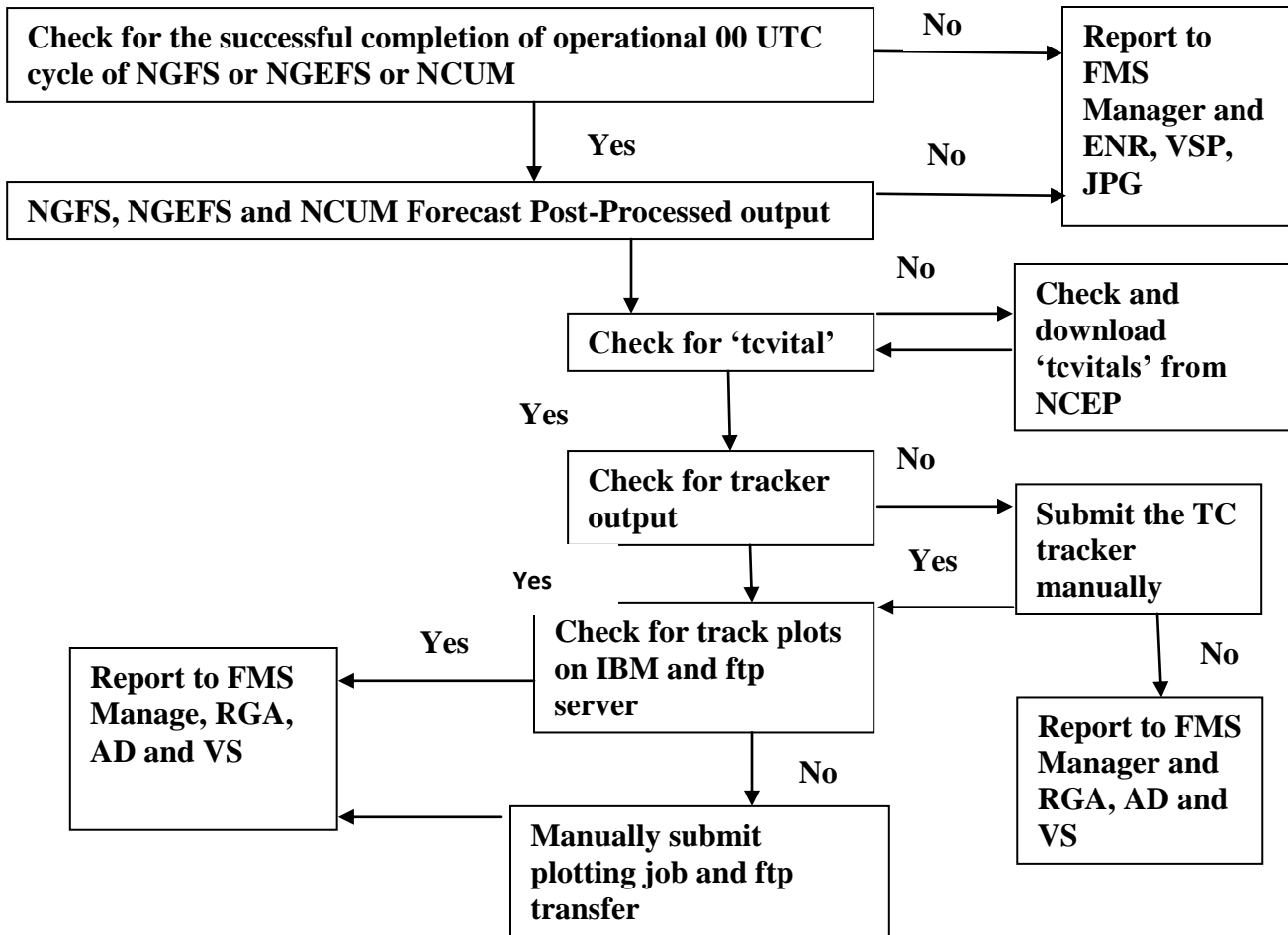
- Facility Management Service (FMS) – G.P Singh and Nisheeth Kumar
- HPC issues – Bangarusamy and Virender Kumar
- LAN - Rahul K
- All Computer Logistics - Computer Group (E.N. Rajagopal) **[ENR]**
- Data Checking and reporting for SWFS - Munmun Das Gupta, Priti Sharma
V. S. Prasad and John P. George, Ashish Routray **[MD, PS, VSP, JPG and AR]**
- Monitoring for TC formation in the forecasts - Anumeha Dube, Raghavendra Ashrit and Gopal Iyengar **[AD,RGA and GRI]**
- Tracker output and plotting - FMS, Vivek Singh, Sushant Kumar, and Kuldeep Sharma**[VS, SK and KS]**
- Generation of SWFS - Raghavendra Ashrit, Anumeha Dube and Gopal Iyengar **[RGA, AD and GRI]**


5. PROCEDURE

NCMRWF's data reception system consists of GTS data pushing service by IMD. All these data transfers use NKN high bandwidth backbone. NCMRWF designated scientists will regularly monitor the forecasts (Day-10 to Day-7) for possible formation and intensification of any low pressure system. Further the designated team will also monitor Day-7 to Day-5 forecasts to alert and subsequently track the system. Preparation of SWFS is to be done following IMD's declaration of formation of deep depression (DD). The Tropical Cyclone vital information ('*tcvitals*') is downloaded daily from NCEP ftp server. The analysis jobs executed four times daily at 00, 06, 12 & 18 UTC make use of the '*tcvitals*' in NGFS and NGEFS for cyclone relocation. At present there is no cyclone relocation procedure in the NCUM. After the model forecast runs and the post processing are completed, the TC Tracker is to be submitted for the two deterministic models (NGFS and NCUM) *without* using the load leveler on HPC. For NGEFS, TC Tracker is to be submitted *through* load leveler. All the processing steps and plotting are carried out automatically and log files are created for monitoring purpose. To maintain quality and standard of output products and to intervene for taking up corrective measures in case of system failures, FMS operator needs to study the log files that are generated.

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5.1 Process Flow



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5.2 Preparation of SWFS for Communicating to IMD/MoES

