

ABSTRAK

ANALISA PERKUATAN MENARA BTS (BASE TRANSCEIVER STATION)

Studi Kasus Pada Menara SST 52 Meter 3 Kaki Tipe Greenfield

Pesatnya perkembangan teknologi berpengaruh pada peningkatan pembangunan menara/tower BTS (Base Transceiver Station) karena kebutuhan jangkauan sinyal untuk masyarakat dalam berkomunikasi yang lebih luas dan berkualitas.

Untuk mengatur pertumbuhan pembangunan menara/tower pemerintah membuat regulasi dalam Permenkominfo NO.2/PER/M.KOMINFO/03/2008 Tentang Pedoman Pembangunan dan Penggunaan Menara Bersama Telekomunikasi.

Karena di dalam regulasi di haruskan adanya kerjasama antar penyedia layanan jasa telekomunikasi untuk menggunakan satu tower bersama, maka perlu di lakukan analisa pada struktur menara/tower ketika terjadi penambahan perangkat pada menara agar stabilitas struktur menara/tower tetap stabil dan aman.

Untuk membantu menganalisa perhitungan struktur menara/tower menggunakan program bantu MS TOWER V.6 berdasarkan standar peraturan pada “Structural Standards for Steel Antenna Tower and Antenna Supporting Structure” [TIA/EIA-222-G, 2005].

Hasil analisis setelah terjadi penambahan beban menunjukkan bahwa di bagian leg pada beberapa panel tidak sesuai dengan kriteria design standar TIA/EIA-222-G, 2005. Yaitu $stress\ ratio < 1$, $displacement, twist \& sway < 0.5^\circ$. Agar stabilitas struktur tetap stabil sesuai dengan kriteria design standar maka perlu di lakukan perkuatan pada beberapa bagian leg yang tidak sesuai dengan kriteria design standar tersebut dengan cara memberikan profil tambahan pada bagian leg tersebut. Setelah di lakukan perkuatan pada bagian leg tersebut hasil analisis menunjukkan bahwa bagian leg yang semula tidak sesuai standar menjadi sesuai dengan standar Yaitu $stress\ ratio < 1$, $displacement, twist \& sway < 0.5^\circ$.

Kata Kunci: SST (Self Supporting Tower), TIA/EIA-222-G, 2005, MS Tower

ABSTRACT

BTS (BASE TRANSCEIVER STATION) TOWER STRENGTH ANALYSIS

Case Study on SST Tower 52 Meters 3 Feet Greenfield Type

The rapid development of technology has an effect on increasing the construction of BTS (Base Transceiver Station) towers because of the need for signal coverage for the community to communicate more widely and with quality.

To regulate the growth of tower construction, the government made a regulation in the Minister of Communication and Information Technology NO.2/PER/M.KOMINFO/03/2008 concerning Guidelines for the Construction and Use of Telecommunications Joint Towers.

Because the regulation requires cooperation between telecommunications service providers to use one tower together, it is necessary to analyze the structure of the tower/tower when additional equipment is added to the tower so that the stability of the tower/tower structure remains stable and safe.

To help analyze the calculation of the tower structure using the MS TOWER V.6 auxiliary program based on the regulatory standards in "Structural Standards for Steel Antenna Tower and Antenna Supporting Structure" [TIA/EIA-222-G, 2005].

The results of the analysis after the addition of the load showed that the legs on some panels did not match the standard design criteria of TIA/EIA-222-G, 2005. That is, stress ratio <1 , displacement, twist & sway $<0.5^\circ$. In order for the stability of the structure to remain stable in accordance with standard design criteria, it is necessary to strengthen some parts of the leg that do not comply with the standard design criteria by providing additional profiles on the leg. After strengthening the leg, the results of the analysis show that the leg which was originally not in accordance with the standard has become in accordance with the standard, namely stress ratio <1 , displacement, twist & sway $<0.5^\circ$.

Keywords: SST (Self Supporting Tower), TIA/EIA-222-G, 2005, MS Tower