



NATIONAL PETROCHEMICAL COMPANY
STANDARDS

ENGINEERING STANDARD
FOR
PROJECT CODING & NUMBERING

NPCS-ES-CN-02

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CONTENTS

1	<u>PURPOSE</u>
2	<u>APPLICATION</u>
3	<u>PROJECTS NUMBERING</u>
4	<u>AREA AND UNIT NUMBERING</u>
5	<u>EQUIPMENT CODING AND NUMBERING</u>
5.1	EQUIPMENT CODING
5.2	EQUIPMENT NUMBERING
5.3	SUFFIXES
6	<u>ENGINEERING DISCIPLINES AND PROJECT SECTIONS CODING</u>
6.1	ENGINEERING DISCIPLINES CODING
6.2	PROJECT SECTIONS CODING
7	<u>PIPING SYSTEM</u>
7.1	PIPELINES CODING AND NUMBERING
1.2	INSULATION AND HEAT TRACING CODING
8	<u>INSTRUMENTS AND ELECTRICS CODING AND NUMBERING</u>
8.1	INSTRUMENTS AND ELECTRICS CODING
8.2	INSTRUMENTS AND ELECTRICS NUMBERING
9	<u>CORRESPONDENCE CODING AND NUMBERING</u>
9.1	EXTERNAL CORRESPONDENCE CODING AND NUMBERING
9.2	INTERNAL CORRESPONDENCE CODING AND NUMBERING
9.3	MINUTES OF MEETINGS CODING AND NUMBERING

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10	<u>DRAWINGS AND DOCUMENTS CODING AND NUMBERING</u>
10.1	DRAWINGS AND DOCUMENTS SIZE
10.2	FUNDAMENTAL DEFINITIONS
10.3	TYPES OF TECHNICAL DOCUMENTS
10.4	DRAWINGS CODING AND NUMBERING
10.5	DOCUMENTS CODING AND NUMBERING
10.6	REQUISITIONS CODING AND NUMBERING
10.7	INQUIRIES AND PURCHASE ORDERS CODING AND NUMBERING
10.8	VENDOR DRAWINGS CODING AND NUMBERING
11	<u>NPC STANDARDS AS PROJECT DOCUMENTS</u>

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1 PURPOSE

The purpose of this engineering standard is presentation of the requirements for the major and the most outstanding cases of coding and numbering within a petrochemical project.

2 APPLICATION

The requirements and instructions of this standard shall apply to all projects of National Petrochemical Company.

No deviation is permitted without prior written confirmation of NPC as the client of the projects.

3 PROJECTS NUMBERING

NPC projects shall be numbered with a four-digit number. The first two digits may be used to represent the NPC organization, affiliated or subsidiary company, supervising or taking the responsibility of the project.

The last two digits shall represent the sequential number.

Job number is the project number from the contractor's point of view and according to the contractor's own basis. As such, NPC, as the client, emphasizes on the project number as NPC's designation and leaves the job number for the contractor and has no restriction on it.

4 AREA AND UNIT NUMBERING

Generally each petrochemical plant or complex is divided into three areas:

a) Off-site area (feed and product storages, etc.).



b) Utility area (water treatment, steam generation, power generation, instrument/plant air generation, Nitrogen system, etc.).

c) Process area (fractionation, distillation, reaction, filtration, etc.).

Each distinct operation within an area shall be designated as a unit, and each unit shall be numbered with a three-digit number.

The first digit (from left), being zero, shall be reserved for special applications. Figures from 1 to 6 shall be used for the main process units, from which the sub-units are derived, using the second digit from 0 to 9, as appropriate. For utilities the first digit shall take figure 7 or 8 and for off-site units figure 9. As such, there are twenty available numbers for utility units and ten for off-site units.

The third digit shall always be zero. This is necessary because of the requirement for abbreviated unit number, in two digits, in cases in which the unit designation is needed, e.g. 25 instead of 250 for equipment and instrument numbering.

5

EQUIPMENT CODING AND NUMBERING

Equipment shall be identified with a code followed by a number;

X X X - X X X X
CODE - NUMBER

5.1

EQUIPMENT CODING

All equipment, being generally used in a petrochemical plant or complex shall be coded as following:

AE	Airfin Cooler
AU	Autoclave
BC	Belt Conveyer
BE	Bucket Elevator
BG	Breaker Gyratory

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BM	Pulverizer: Ball Mill
C	compressor
CE	Centrifuge
CY	Cyclone and Hydroclone
D	Pressure Vessel
DO	Drying Oven
DS	Desuperheater
E	Heat Exchanger
EX	Extruder
FH1	Hydrant
FH2	Hydrant with Water Monitor
FT	Filter
G	Gas Turbine Motor
GB	Gear Box
GH	Gas Holder
GR	Grinder
H	Furnace
HH	Hose House
HR1	Hose Reel
J	Ejector
KN	Kneader
LX	Loading Arm
MX	Mixer
P	Pump
R	Reactor
RB	Ribbon Blender
RC	Roll Crusher

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RC	Roller Conveyer with Motor
RK	Rotary Kiln
RV	Rotary Valve with Motor.
SC	Screw Conveyer
SK	Skimmer or Scraper with Motor
SR	Size Reduction
ST	Steam Trap
T	Tower/Column
TK	Tank
VC	Vibrating Conveyer
W	Pelletizer
X	Tank Heater
YH1	Yard Hydrant

5.2 EQUIPMENT NUMBERING

All equipment shall be numbered with a four-digit number.

The first two digits is the abbreviated unit number; i.e. the first two digits of the unit number to which the equipment belongs.

The last two digits shall represent the sequential number of the equipment in that unit, beginning from 01.

5.3 SUFFIXES

5.3.1 In case of stand-by equipment with the main equipment, a single-letter suffix, (A,B,C,....), shall follow the equipment number, in the order of being or coming into service. For example, P-2508A represents the main operating pump number 08 which belongs to unit 25. In turn, P-2508B and P-2508C represent the first and the second stand-by pumps which will come into service in case of main and first stand-by pumps failure, respectively.

5.3.2 In case of simultaneous and parallel operation of the same equipment, they shall be represented by adding a Roman figure (I,II,III,.....) suffix after the same number.



5.3.3

As for pumps different drivers may be used, the following suffixes in parenthesis shall indicate the appropriate case as the last term for pumps numbering:

(D)	Diesel Drive
(G)	Gas Turbine Drive
(H)	Hydraulic Turbine Drive
(M)	Motor Drive
(T)	Steam Turbine Drive

Example:

MX-2215 B represents a stand-by mixer in unit 220 with sequential number 15.

6

ENGINEERING DISCIPLINES AND PROJECT SECTIONS CODING

6.1

ENGINEERING DISCIPLINES CODING

Generally, the following engineering disciplines are distinguished in carrying out a typical petrochemical project, for which a two-letter code shall be used:

EL	Electrical Engineering
GC	General Civil Engineering
HM	Heat and Mass Transfer Engineering (Thermal Equipment Engineering)
IN	Instrumentation Engineering
ME	Mechanical Equipment Engineering (Non-Rotating Equipment Engineering)
PI	Piping Engineering (General Mechanical and Interconnection Engineering)
PR	Process Engineering
PV	Pressure Vessel Engineering (generally, Vessels Engineering)