कार्यालय प्रमुख अभियंता लोक स्वास्थ्य यांत्रिकी विभाग
इन्द्रावती भवन, ब्लॉक–बी–4, तृतीय तल, छत्तीसगढ़, नया रायपुर

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प्रति,

अपर मुख्य सचिव,
छत्तीसगढ़ शासन,
लोक स्वास्थ्य यांत्रिकी विभाग,
मंत्रालय, महानदी भवन, नया रायपुर

विषयः राज्यमद की नलजल / समूह जल प्रदाय योजनाओं के रूपाकंन अवधि बाबत्।

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सी.पी.एच.ई.ई.ओ. (शहरी विकास मंत्रालय, भारत सरकार) द्वारा जारी जल प्रदाय एवं अनुशोधन मैन्युअल के पैरा की कण्डिका 2.2.6 अनुसार जल प्रदाय परियोजनायें सामान्यतः 30 वर्षों की जल प्रदाय आवश्यकताओं के लिए रूपाकिंत किये जाने निर्देश है एवं परियोजना के विभिन्न अवयवों की रूपाकिंत अवधि जैसे कि पम्पिंग, वाटर ट्रीटमेंन्ट यूनिट्स, पाइप लाइन, इत्यादि के लिए 30 वर्ष या 15 वर्ष, **संलग्न परिशिष्ट अ** अनुसार दिया गया है।

पेयजल एवं स्वच्छता मंत्रालय, भारत सरकार के पत्र क्रमांक F No. W-11011/01/2012-W-I दिनांक 20.02.2013 से राष्ट्रीय ग्रामीण जल प्रदाय योजना (NRDWP) ग्रामीण जल प्रदाय योजनाओं के लिए विस्तृत परियोजना पत्रक तैयार करने मैन्युअल जारी किया गया है। इस मैन्युअल की कण्डिका 1.2(12) में कुल जल की मांग को योजना की पूर्णता के पश्चात 10 , 20 एवं 30 वर्षो में विभक्त किया गया है तथा कण्डिका (3) में 10, 20 एवं 30 वर्षो में परियोजना के विभिन्न अवयवों को रूपाकिंत करने निर्देश है (**संलग्न परिशिष्ट ब**)।

प्रदेश में राज्य मद में समूह जल प्रदाय योजनाओं की स्वीकृति एवं क्रियान्वयन किया जा रहा है। CPHEEO एवं NRDWP के उपरोक्त प्रवधानों के कारण मैदानी कार्यालय में भ्रम की स्थिति निर्मित हो रही है। कुछ जिलों से योजनाओं को 20 वर्ष के लिए रूपाकिंत किया जा रहा है तो कुछ जिले में 30 वर्षो के लिए । चूंकि समूह नलजल योजनाओं के हेड वर्क का संचालन संधारण विभाग के द्वारा किया जाना है, शासन स्तर पर उपसचिव (तकनीकी) द्वारा चर्चा में अवगत कराया गया है कि राज्य मद से क्रियान्वित योजनाओं का रूपाकंन CPHEEO मैन्युअल के अनुसार किया जाना उचित होगा।

अतः प्रदेश में एक–रूपता रहे इसके लिए CPHEEO के प्रावधानों के अनुसार राज्य मद अथवा नाबार्ड मद में प्रस्तावित ग्रामीण समूह जल प्रदाय योजनाओं को रूपाकिंत किया जाना प्रस्तावित है। कृपया इस हेतु आवश्यक निर्देश जारी करना चाहेंगे।

सहायक :– उपरोक्तानुसार

13.7.15

प्रमुख अभियंता
लोक स्वास्थ्य यांत्रिकी विभाग
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house etc. In mild climates operating structures need to be protected against rain and sun while in adverse climates complete protection against such weather is advisable.

2.2.5 OTHER UTILITIES

Provision needs to be made for facilities such as electricity, water supply and drainage, roadways, parking areas, walkways, fencing, telephone facilities and other welfare services such as housing for operation and maintenance personnel.

2.2.6 DESIGN PERIOD

Water Supply projects may be designed normally to meet the requirements over a thirty-year period after their completion. The time lag between design and completion of the project should also be taken into account which should not exceed two years to five years depending on the size of the project. The thirty year period may however be modified in regard to certain components of the project depending on their useful life or the facility for carrying out extensions when required and rate of interest so that expenditure far ahead of utility is avoided. Necessary land for future expansion/duplication of components should be acquired in the beginning itself. Where expensive tunnels and large aqueducts are involved entailing large capital outlay for duplication, they may be designed for ultimate project requirements. Where failure such as collapse of steel pipes under vacuum put the pipe line out of commission for a long time or the pipe location presents special hazards such as floods, ice, and mining etc., duplicate lines may be necessary.

Project components may be designed to meet the requirements of the following design periods:

Sl. No.	Items	Design period in years
1.	Storage by dams	50
2.	Infiltration works	30
3.	Pumping:	
	(i) Pump house (civil works)	30
	(ii) Electric motors and pumps	15
4.	Water treatment units	15
5.	Pipe connection to several treatment units and other small appurtenances	30
6.	Raw water and clear water conveying mains	30
7.	Clear water reservoirs at the head works, balancing tanks and service reservoirs (overhead or ground level)	15
8.	Distribution system	30

2.2.7 POPULATION FORECAST

2.2.7.1 GENERAL CONSIDERATIONS

The design population will have to be estimated with due regard to all the factors governing the future growth and development of the project area in the industrial, commercial, educational, social and administrative spheres. Special factors causing sudden emigration or influx of population should also be foreseen to the extent possible.

A judgement based on these factors would help in selecting the most suitable method of deriving the probable trend of the population growth in the area or areas of the project from out of the following mathematical methods, graphically interpreted where necessary.

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2.2 Topographical maps with total station survey must be got prepared before preparation of the scheme as the maps prepared by Survey of India do not show all the streets, also the length of the streets and nodal levels may not match with ground reality and new habitations may not be included in these maps. Topographical maps must include all habitations of the census village, existing water sources, road network with existing side drains, all built up structures such as human settlements institutions etc

2.3 Some more details of the village, main activities like water sources, any commercial activities or industries, any historical importance, natural resources, rail and road connectivity, details of bus stand, railway station, market, schools and anganwadis etc.

2.4 Long Period average rainfall and details of actual rainfall of at least last five years be taken. The details may be based on data of rain gauges installed at tehsil/block headquarters, if rain gauges are not installed there then data of rain gages installed at nearby Irrigation dams/ reservoirs. However where there is no such facilities available, the district rainfall data is the only source to be used. A provision of automatic weather station comprising of temperature meter, Rain-gauge, relative humidity meter, evaporation meter to be incorporated in comprehensive piped water supply scheme.

3. Project Execution and Design Period

a) Project Execution Period

The time lag between Preparation design, tendering, Construction and Completion/ Commissioning of the proposed scheme should not exceed as specified under

i). Mini pipe water supply scheme	upto 01 years
ii). Standalone water supply scheme	01 to 02 years
iii). Multi village water Supply scheme	02 to 03 years

b) Project Design Period

Project components may be designed to meet the requirements of the following design period

S No.	Items	Design period in years
1	Source a. Surface b. Ground Water	 30 20
2	Intake works	30
3	Pumping	
	i. Pump house (Civil works)	20
	ii. Electric motors and pumps*	10
4	Water Treatment Units	20
5	Pipe connection to several treatment units and other small appurtenances	20
6	Raw water and clear water conveying mains	20
7	Clear water reservoirs at the head works, balancing tanks and service reservoirs	20

	(overhead or ground level)	
8	Distribution system	20

* The stars rated (electric motors- energy efficient and pumps may be used.

4. Population

4.1 Total no of revenue villages and all their habitations should be listed with their code nos. in the schemes and the total population specifying the population of SC/ST/OBC and minority population separately. Latest census (2011) population, likely present population as per GP records, no. of households should also be used.

4.2 Estimation of design population for the proposed water supply scheme size by considering the census data of past decades, for population projections with different mathematical models as shown under:

S. No.	Mathematical Models
1	Arithmetical Increase Method
2	Geometrical Increase Method
3	Incremental Increase Method
4	Line-fit Graphical Method a. Exponential Trend Curve b. Linear Trend Line
5	Decadal growth Method

The design population will have to be estimated with due regard to all the factors governing the future growth and development of the project area in the industrial, urbanization, commercial, educational, social and administrative spheres. Special factors causing sudden emigration or influx of population should also be foreseen to the extent possible. Lag period shell be considered 1-3 years depending on the project. A judgment based on these factors will help in selecting the most suitable probable trend of population and shall be adopted accordingly. This design population figure should then be used to calculate water demand for the proposed water supply scheme.

5. Water Demand

a. *Domestic Needs*: Recommended per capita water supply level for designing of the scheme for domestic purpose shall be adopted @ 40 LPCD or as notified by state government for household connections.

b. *Institutional/Industries and Commercial Demands:* The water requirement for the institutions shall be provided in addition to domestic water demands with due consideration to present and likely upcoming institutions during design period like government and other offices, hospitals, hostels, nursing homes, boarding and day schools/ colleges, residential