Appendix A

The set of all planning scenarios is defined as $\boldsymbol{S}$= {S_1, S_2, …, S_m}. The evaluation index of each scheme is set as $\boldsymbol{C}$= {C_1, C_2, …, C_{11}}. At the same time, the mean and standard deviation of the evaluation indicators of each scheme are set as $\boldsymbol{M} = \{\mu_1, \mu_2, \cdots, \mu_{11}\}$and $\boldsymbol{\Sigma} = \{\sigma_1, \sigma_2, \cdots, \sigma_{11}\}$. Using the three-sigma criterion to process the set $\boldsymbol{S}$, the singularity-free scheme $\boldsymbol{S}^* = \{S_i \in \boldsymbol{S} \mid \forall c_{i,j} \in [\mu_j - 3\sigma_j, \mu_j + 3\sigma_j]\}$. The obtained set $\boldsymbol{S}^*$ is continuously checked by three-sigma to obtain a new $\boldsymbol{S}^*$**.** Thereby eliminating the singular scheme until the set $\boldsymbol{S}^*$ no longer changes.

After obtaining the final $\boldsymbol{S}^*$, the dual excitation control line is further determined. $\boldsymbol{\Gamma}$, $r^a_{\max}, r^a_{\min}, \overline{r^a}$ are defined as the set of global growth rates, the global maximum growth rate, the global minimum growth rate and the global average growth rate, respectively. The calculation formula is as follows:

$$\begin{cases} \Gamma = \{r_i^a \left| r_i^a = \dfrac{\sum_{k=1}^{N-1} (y_{i,k+1} - y_{i,k}) / (t_{k+1} - t_k)}{(N-1)}, S_i \in S^* \right.\} \\ r^a_{\max} = \max\limits_i \{r_i^a\} \\ r^a_{\min} = \min\limits_i \{r_i^a\} \\ \overline{r^a} = \overline{\Gamma} \end{cases} \tag{A1}$$

Where, y_{ik}, $y_{i,k+1}$ represents the static evaluation value of the k-th and (k+1)-th stage, respectively. And t_k, t_{k+1} respectively represents the time of the k-th and (k+1)-th stage. It can be seen that the elements of the global growth rate set respectively represent the average level of changes in the static assessment values in the adjacent stages of each planning case.

Finally, the slope of the positive and negative excitation lines is calculated by setting the slope offset $V^+, V^- \in (0,1]$, and the formula is:

$$\begin{cases} k^+ = \overline{r^a} + V^+ (r^a_{\max} - \overline{r^a}) \\ k^- = \overline{r^a} + V^- (\overline{r^a} - r^a_{\min}) \end{cases} \tag{A2}$$

Appendix B

Stage 1											
	C_F	C_D	C_{N-1}	C_P	C_B	C_{save}	C_e	C_{RS-3}	C_T	C_U	C_{loss}
Case 1	0.9	0.1	0.941	0.3756	0.121231	626.215	506.605	0.9977	12.2884	0.9165	183.103
Case 2	0.3	0.6	0.974	0.2588	0.311321	713.978	400.209	0.9974	15.1273	0.9343	77.6931
Case 3	0.8	0.32	0.913	0.2436	0.223421	655.177	530.720	0.9976	9.94605	0.9129	77.675
Case 4	0.7	0.43	0.962	0.2636	0.171234	695.955	640.508	0.9980	9.81811	0.9553	187.142
Stage 2											
	C_F	C_D	C_{N-1}	C_P	C_B	C_{save}	C_e	C_{RS-3}	C_T	C_U	C_{loss}
Case 1	0.65	0.35	0.964	0.3623	0.362916	621.692	649.734	0.9971	14.1951	0.9632	201.807
Case 2	0.8	0.36	0.900	0.3864	0.343659	633.821	421.816	0.9989	19.4292	0.9632	220.512
Case 3	0.71	0.41	0.969	0.3348	0.225867	593.209	744.309	0.9976	5.97058	0.9721	107.147
Case 4	0.6	0.4	0.975	0.4599	0.255586	826.61	586.129	0.9978	15.7778	0.9563	239.674
Stage 3											
	C_F	C_D	C_{N-1}	C_P	C_B	C_{save}	C_e	C_{RS-3}	C_T	C_U	C_{loss}

Case 1	0.5	0.53	0.982	0.6196	0.225395	687.857	730.559	0.9987	11.1446	0.9563	159.326
Case 2	0.76	0.35	0.902	0.5292	0.092225	765.925	641.832	0.9992	17.1896	0.9632	236.145
Case 3	0.53	0.43	0.913	0.4183	0.178001	763.656	617.815	0.9977	14.4760	0.9721	173.639
Case 4	0.35	0.65	0.950	0.4461	0.176177	792.193	600.414	0.9975	5.02864	0.9721	70.7356
Stage 4											
	C_F	C_D	C_{N-1}	C_P	C_B	C_{save}	C_e	C_{RS-3}	C_T	C_U	C_{loss}
Case 1	0.46	0.49	0.945	0.5042	0.257539	687.814	416.292	0.9987	8.86544	0.9563	99.9073
Case 2	0.32	0.5	0.972	0.6493	0.380852	605.658	599.898	0.9994	7.99074	0.9784	129.072
Case 3	0.31	0.61	0.971	0.7305	0.31448	824.498	721.043	0.9989	6.50781	0.9784	95.4318
Case 4	0.25	0.62	0.936	0.6830	0.318107	668.785	697.763	0.9987	15.4810	0.9784	64.8041